UNIVERSITY OF COPENHAGEN

# Investigating the Urban Land Nexus and Inclusive Urbanisation in Dar es Salaam, Mwanza, and Khartoum

## Research Report

Three City Land Nexus Research Team

*Publication date:*
2020

*Document version*
Publisher's PDF, also known as Version of record

*Document license:*
CC BY

*Citation for published version (APA):*
Three City Land Nexus Research Team (2020). *Investigating the Urban Land Nexus and Inclusive Urbanisation in Dar es Salaam, Mwanza, and Khartoum: Research Report*. Institute of Development Studies, IDS.

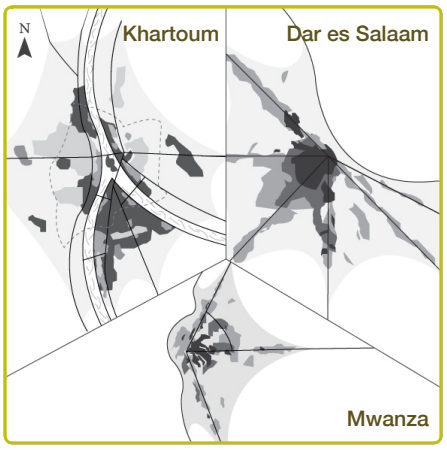
Download date: 04. May. 2023

EARF EAST AFRICA RESEARCH FUND

Research Report

IDS Institute of Development Studies

THE URBAN LAND NEXUS AND INCLUSIVE URBANISATION IN DAR ES SALAAM, MWANZA AND KHARTOUM




# Investigating the Urban Land Nexus and Inclusive Urbanisation in Dar es Salaam, Mwanza, and Khartoum

Three City Land Nexus Research Team

February 2020

## Contents

**Suggested citation** Three City Land Nexus Research Team (2020) *Investigating the Urban Land Nexus and Inclusive Urbanisation in Dar es Salaam, Mwanza, and Khartoum*, Research Report, Brighton, UK: Institute of Development Studies (IDS) and East African Research Fund (EARF)

**Authors** The research for this Research Report was undertaken by the Three City Land Nexus Research Team. A full list of authors and contributors can be found in Annexe A.

**Contacts** Gordon McGranahan: gordon.mcgranahan@gmail.com
Alphonce Kyessi: akyessi@gmail.com
Salah M. Osman: smosman99@gmail.com
Griet Steel: g.steel@uu.nl

The opinions expressed are those of the authors and do not necessarily reflect the views of IDS, EARF, DFID or any of the institutions involved.

**ISBN** 978-1-78118-614-5

This Research Report is published under a CC BY licence.

This is an Open Access report distributed under the terms of the Creative Commons Attribution 4.0 International licence (CC BY), which permits unrestricted use, distribution, and reproduction in any medium, provided the original authors and source are credited and any modifications or adaptations are indicated. http://creativecommons.org/licenses/by/4.0/legalcode

**Copyright** © Department for International Devlopment, 2020

**Acknowledgements** This material has been funded by UK aid from the UK government; however, the views expressed do not necessarily reflect the UK government's official policies. It is an output of a consortium undertaking a project titled 'The Urban Land Nexus and Inclusive Urbanisation in Dar es Salaam, Mwanza and Khartoum', led by the Institute of Development Studies (IDS), UK, in partnership with: Ardhi University, Tanzania; University of Khartoum, Sudan; Centre for Community Initiatives (CCI), Tanzania; Commonwealth Local Government Forum (CLGF); Istidama, Khartoum; International Institute for Environment and Development (IIED), UK; University of Copenhagen, Denmark; and Utrecht University, The Netherlands.

**Other outputs from the project**

**Synthesis Report** *Examining the Urban Land Nexus and Inclusive Urbanisation in Dar es Salaam, Mwanza, and Khartoum*

**Briefing Note 1** *The Urban Land Nexus and Inclusive Urbanisation in Dar es Salaam, Mwanza, and Khartoum*

**Briefing Note 2** *The Urban Land Nexus and Inclusive Urbanisation in Dar es Salaam and Mwanza*

**Briefing Note 3** *The Urban Land Nexus and Inclusive Urbanisation in Khartoum*

**Annexes** – The Urban Land Nexus and Inclusive Urbanisation in Dar es Salaam, Mwanza, and Khartoum

The East Africa Research Fund (EARF) is a regional funding mechanism designed to procure and manage a portfolio of research projects under the East Africa Research Hub (EARH) of the Department for International Development (DFID), located in Nairobi, Kenya. EARF's reach covers Kenya, Tanzania, Uganda, Rwanda, Ethiopia, Somalia, Sudan, and South Sudan.

# 1 Background

## 1.1 The urban land nexus and the challenge of inclusive development in rapidly urbanising settings

When people and enterprises come together in a growing city, they can benefit from agglomeration economies related to scale, specialisation, and shared learning, but must contend for space, location, and more in the urban land nexus (Scott and Storper 2015). Uneven agglomeration economies and diseconomies contribute to making what goes where in the urban land nexus important, contested, and politically significant. City master plans often try to prescribe the land use development of the city, using maps, zoning, and regulation to guide the way. In practice, city systems are hard to control, and overambitious controls can undermine a city's economic vitality and resilience and provide a vehicle for exclusion. On the other hand, without planning, coordination, and some form of collective agency, private conflicts undermine the public interest, and also result in exclusion. More adaptive and politically informed efforts help to shape successful cities, but ensuring inclusion is a particular challenge. Even more than with conventional planning, adaptive planning requires those concerned with increasing inclusion to have a detailed spatial understanding of the city system and its land nexus processes and politics. In this orchestrated struggle, it is likely to be as important for residents as for authorities to 'know their city'. Moreover, concerted efforts are needed to find politically viable measures that make a difference.

Many countries in Africa have low average incomes and high urbanisation and urban population growth rates. This combination, which has been experienced at some time in all parts of the world, can make life particularly difficult for vulnerable groups trying to make a home and a living in the city. The challenges vary enormously across the continent and are also different from what those countries with this combination of circumstances faced in the past, partly because of being set within a very different global political and economic, and natural environment, and partly because of the specificities of the region. However, as in the past, governments and other elite groups are often concerned that too many people ill-equipped to live in and contribute to their cities are moving in. Low-income residents are often pushed by markets, governments or the residents of more exclusive neighbourhoods who see them as encroachers, into overcrowded central areas, isolated locations towards the periphery, or informal and marginal spaces not yet closely controlled by private or public interests. The continuing churn of the land nexus can be particularly disruptive for residents of low socioeconomic status who are also tenants or migrants. Within vulnerable groups, women often bear a disproportionate share of the burden, particularly when they have large caring and home-maintenance roles. Agreeing on politically feasible means of ensuring that the urban land nexus accommodates these vulnerable groups equitably is central to creating more inclusive cities.

### 1.2 The goal of the research

The goal of this research is to stimulate informed policy debate on actionable changes that are politically feasible, economically desirable, scalable, and foster more inclusive urbanisation. For this purpose, it seeks to understand key aspects of the structure and dynamics of the land nexus of the three selected cities, how socioeconomic status is related to the experiences of land nexus processes such as densification, peri-urban development, settlement regularisation, forced displacement, gentrification, and infrastructure expansion. This is done with a view to identifying politically feasible changes that can make land nexus processes more inclusive.

### 1.3 The choice of cities

The selected cities are the primate cities of Tanzania (Dar es Salaam) and Sudan (Khartoum), both of which have populations of around six million, and a second-tier city in Tanzania (Mwanza) with a population of about one million. Both Dar es Salaam and Mwanza have been growing at 5–6 per cent annually in recent years (United Nations Population Division 2018).[1] They provide the basis for comparing across two Tanzanian cities that are growing at the same rate but are at different positions in the country's city hierarchy. Dar es Salaam and Khartoum, on the other hand, provide the basis for comparing two similarly sized cities in very different countries, with Dar es Salaam currently experiencing particularly high rates of population growth, and Khartoum having experienced considerable crisis and conflict-led in-migration in recent decades and currently undergoing a shift in its political landscape due to a popular uprising and the fall of the government led by former president Omar Al-Bashir.

### 1.4 The approach

The conceptual framework for this research treats cities as systems and examines the political economy of each city's urban land nexus. The urban land nexus provides the entry point for examining how vulnerable groups fare in the city system, and how the cities could be made more inclusive, bearing in mind that a well-organised land nexus must also contribute to cities' overall social and economic success.

The context for all three cities includes rapid urbanisation and city population growth. If not well managed, such processes can foster unnecessarily exclusive urban policies that, in an attempt not to encourage too many poor people from coming to the city, make life more difficult for a range of vulnerable groups. To fine-tune the conceptual framework, we worked to summarise and extend the theories of several key land nexus processes, including gentrification, peri-urban informal settlements, land grabs, and urban space syntax. We also gathered secondary research on key land nexus issues in the different cities, including densification, state-led displacement, land conflict, mega-development, and infrastructure development, as well as those just mentioned.

1 Both Dar es Salaam and Mwanza are regions as well as cities; but in Dar es Salaam the boundaries are contiguous, whereas in Mwanza most of the area of the region is beyond the boundaries of the two municipalities that make up the city. In this report, the names Dar es Salaam and Mwanza refer to the cities, unless otherwise noted.

As part of the empirical work on each city's land nexus, we have been developing a geographic information system (GIS) through which a selection of maps of each city's land nexus can be generated, including maps related to population, land uses, connectivity, land prices, and selected infrastructure systems. These provide an important evidence base, which any convincing analysis must engage with and either come to terms with or challenge. In Tanzania, the GIS analysis was linked up to a spatial analysis of census data, allowing various claims about the configuration of the urban land nexuses and their population to be explored, and linked up to more detailed analyses of particular places.

To help understand some of the more contested and potentially exclusionary land nexus processes, we undertook ten case studies in each city to assess the situation of different vulnerable groups, including those with overlapping vulnerabilities, such as low-income status, precarious tenancy, irregular status as migrants, or women without social safety nets. We used a mixed methods approach combining key informant interviews with various stakeholders (including community members of various types), focus group discussions (within the communities and with policymakers), life trajectory interviews, small-scale surveys, and community mapping (for an overview see Annexe C).

In both countries, the main methodological starting point was to engage stakeholders and particularly potential users of the evidence from the very start of the project. In Tanzania, this included partnering with the Centre for Community Initiatives and the Tanzania Urban Poor Federation (TUPF) it supports (this federation is a grass-roots organisation built up around women's savings groups). More formal policy/stakeholder dialogues were undertaken after the first ten case studies were finalised in both Mwanza and Dar es Salaam. These dialogues included community members from the case study areas as well as officials from government, water and sanitation utilities, and private and civil society stakeholders.

In Khartoum, cooperation with civil society organisations was complicated by the political climate and the changes in the political regime that were taking place during the research period. Continuous exchange between research and practice was, however, achieved by involving local policymakers from the Ministry of Physical Planning and the Ministry of Infrastructure, Khartoum State, from the early design of the project through to the policy discussions, as they are executive bodies which will need to act constructively in response to the results of the study if they are to have a sustained impact. In addition, for the definition of the problem statement, data collection and analysis, we cooperated closely with a group of a relatively young generation of predominantly female civil servants working at the Ministry of Physical Planning in Khartoum. They have not only shown great enthusiasm and reflexivity to investigate the urban space in Khartoum, but have also indicated that the research supported them to take a more critical stance in their jobs as urban planners and to move beyond the technical domain of the planning to the wider socio-spatial analysis of urban development. In the research uptake phase of this project they could become important brokers in negotiating concrete propositions on how to make the urban land nexus in Khartoum more inclusive, especially through their involvement in civil society initiatives such as Sudan NextGen. The team is also active in preparing articles for local journals targeting fellow professionals, as well as booklets for a wider readership.

# 2 Dar es Salaam and Mwanza

## 2.1 An overview of the growth of the cities, their governance, and changing land nexus

Dar es Salaam and Mwanza have been two of Tanzania's fastest growing cities in recent decades, with annual growth rates of 5.4 per cent and 5.8 per cent respectively (United Nations Population Division 2018). Among almost 2,000 cities in the world with populations of 300,000 or more, this puts them in the 100 fastest growing, with doubling times of less than 15 years. Neither the national nor the local governments have fully come to terms with such rapid city growth. Partly as a result, a large share of the population growth has been accommodated in settlements described as informal, as they were not planned and generally do not conform to formal planning regulations. If such settlements had simply been forced to conform, the high residential standards and regulations of the formal sector would have led to exclusion rather than upgrading (Kironde 2006). It was not politically realistic either to formally accept regulations everyone could afford to meet, or to remove everyone who could not afford to conform to the resulting regulations, with informal settlement as an awkward compromise. In recent decades, steps have been taken to grant dispensation to informal settlements, but to aim for formalisation over the longer term. Thus, efforts to regularise settlement in these cities are growing, even as the demographic and economic pressures that engendered informal settlement have eased. Dar es Salaam and Mwanza may be reaching peak 'informality' – with the long-standing tendency for the population share in informal settlements finally going into reverse (Kombe 2017). It is critically important to ensure that the ongoing regularisation and formalisation open up, rather than close down, opportunities for vulnerable groups and the still low-income majority (Kyessi and Tumpale 2014).

The origins of informal settlement and its discontents go back to the colonial legacy, which had a profound impact on housing and land use structure (Kironde 2007), and a combination of extremely high city growth rates and anti-urbanisation policies in the early independence period. Urban groups, particularly in Dar es Salaam, played a lead role in Tanzania's struggle for independence (Brennan 2012). However, the rising number of people moving to cities in the wake of independence, and the difficulties and potential conflicts around meeting urban aspirations, quickly shifted the post-independence leadership towards more rural-based politics (as in many other countries of the region). As already evident in Nyerere's Arusha Declaration of 1967, Tanzanian socialism prioritised rural development, and moving to the city was discouraged. Especially for women, city living came to be seen as corrupting, though a growing share of female migrants in the 1970s were single women, many of whom were trying to escape difficult rural circumstances (Callaci 2017: 65). The movements of rural–urban migrants in Tanzania have never been so directly controlled as through the hukou system in China or the infamous apartheid system in South Africa. Nor were the unplanned settlements of Tanzania's cities as removed from local government processes as Brazil's early *favelas*. However, they were informal in ways that had a profound impact on the dynamics of the urban land nexus in cities like Dar es Salaam and Mwanza.

Despite attempts to root development in rural areas, the growth rates of Dar es Salaam, Mwanza, and several other Tanzanian cities continued increasing well after independence, peaking in the 1970s at 10 per cent a year (United Nations Population Division 2018). Such growth not only dwarfed current rates, but was mostly the result of migration into the cities, as compared to current growth within which the natural population growth of the cities is also a major contributor. Much of this growth was unplanned and described as squatting, reinforcing the view that in-migration as well as informal settlement needed to be restricted (Callaci 2017: 39; Stren 1975). Informal settlement continued, with only intermittent restraints and evictions, and such unplanned settlements now house an estimated 70 per cent of the population in Dar es Salaam (Moshi, Msuya and Todd 2018) with a similar share estimated for Mwanza in the past (NEMC 2013; URT 2016a: 24) (as described below, our GIS-based assessments using 2012 census data and maps of informal settlements suggest somewhat lower figures).

In practice, this 'informality' covers a wide range of housing and tenure situations, and includes most rental accommodation (roughly 40 per cent of the population in both cities are private tenants) as well as owner occupation. In effect, planning and providing for the rapid and largely low-income population growth is too costly, while large-scale evictions and draconian measures to stop settlement growth are too conflictive and disruptive. In this political economy, informal development was an awkward but almost inevitable compromise, common across the East African region, but achieved with somewhat less conflict in Tanzania than elsewhere.

For these city systems, informal settlement serves critical functions, even as it creates major challenges. In both cities, it has sometimes led to settlement in hazardous locations, in areas where settlement is environmentally destructive, and in areas and ways that make later upgrading with basic infrastructure and services unnecessarily costly. More ambiguously, by providing an alternative for those who could not afford to conform to official regulations, it has obscured the fact that if the regulations were fully enforced, they might uplift some, but would exclude many. And more positively, it has enabled settlement in many areas that would already have been opened up for formal settlement had the authorities been more proactive and better resourced. It has also allowed a significant share of the population, and not just developers and property speculators, to capture rising land prices as the city expanded and the land nexus consolidated.

In Tanzanian cities, it is important to recognise that settlements described as informal or unplanned are rarely illegal (Kombe and Kreibich 2000). In areas that were unplanned there can be a wide range of ownership forms, for both the buildings and the land (see Section 2.3.3). Informal plots without titles are usually bought and sold with the approval of local officials and leaders, and in some unplanned settlements there are residents who have gone out of their way to get stronger proof of landownership. Alternatively, in planned settlements some plots have been informally divided up, various encroachments may have taken place, and a significant share of residents may not have proof of landownership. Thus, while informality is important and creates various challenges as well as opportunities, it is not easily defined, or reduceable to a single dimension or a binary attribute that is either present or absent.

Another challenge, which can be complicated by informality but exists independently, is the need to coordinate the multitude of actors, many with a public mandate, who are providing, managing or regulating infrastructure, land use and services across the cities' rapidly expanding land nexus. Master plans have been drafted for both cities, but implementing such plans would require metropolitan authorities with far more resources and political clout than currently exist. It is unrealistic to expect local authorities to gain the power and resources to implement ambitious and closely specified master plans, at least without a restructuring of the cities' implicit political settlements. It is more politically feasible, at least in the short term, to work towards better coordination and planning principles adapted to the political economy of the city systems and their land nexuses. Such coordination is necessary, though not sufficient, in order for cities to meet the challenges of inclusion. A need for better coordination is widely perceived by local stakeholders. Part of the context is that Dar es Salaam City/Region consists of five municipalities, each stretching from the centre to the periphery. Mwanza consists of just two municipalities, one covering central Mwanza and the other somewhat more peripheral. The cities have coordinating bodies, but these have limited authority.

The extent of the informality, and the uneven extension of infrastructures (e.g. sewerage) and public services (e.g. waste collection) to address local land nexus diseconomies (e.g. the negative and spatially concentrated impacts that result from sanitary hazards and waste accumulation, or detrimental construction), also places a heavy responsibility on ward and *mtaa* (sub-ward) political structures and local organisations. In some areas of both cities, these local institutions function impressively well in difficult circumstances, and with little training or support. There is much variation, however, and with the continuing churn in the land nexus, previously effective institutional forms can easily become insufficient or dysfunctional.

Even with better coordination, the development of both cities' land nexus is bound to be contentious. Tanzania experienced little net economic growth over the 1990s, but quite a bit in the 2000s and early 2010s. There are concerns that recent economic growth relies on the exploitation of natural resources and does not reflect productivity growth accompanying urbanisation. For Dar es Salaam, it has been argued that due to the lack of well-supported density and connectivity it is impossible to take sufficient advantage of the economic benefits of urban agglomeration (Collier and Jones 2017). Many of the same arguments could be applied to Mwanza. In principle, their whole populations could benefit from the cities' economic success. This would depend, however, on which particular measures were taken, and on making sure that interventions in the urban land nexus in the name of economic growth were not simply interventions that favour the wealthy over the poor. This in turn depends on more inclusive, and not just better coordinated, processes.

Following Section 2.2 on patterns of settlement, segregation and informality, and Section 2.3 on situating potentially vulnerable groups, this report turns to key land nexus issues arising in Dar es Salaam and Mwanza, and their consequences for some of these vulnerable groups.

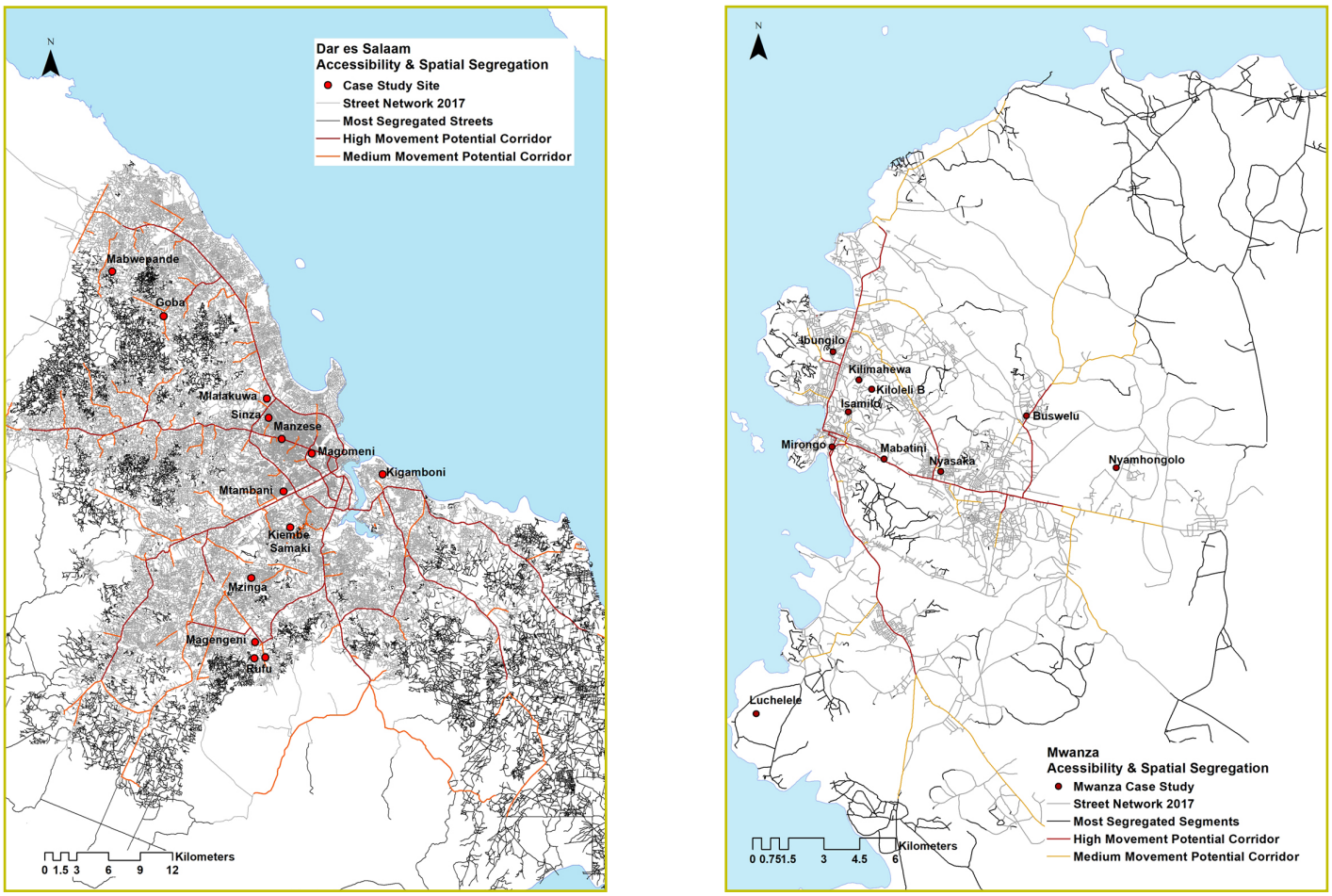



**Figure 1** Space syntax maps showing accessibility and segregation for Dar es Salaam (left) and Mwanza. Source: Basemap accessed from Open Street Map; and space syntax maps generated by the Institute of Development Studies.

## 2.2 Patterns of settlement, segregation, and informality across the land nexus

GISs were used to map population data, street and public transport networks, and settlement type. Layering of these various datasets made it possible to track population density changes across the city and across the ten-year inter-censorial period between 2002 and 2012, to relate these changes to issues of the urban land nexus such as settlement types (planned/unplanned) and the degree to which the various localities of the city were serviced by road, public transport and water networks. To the above, an analysis of the spatial configuration of the city was added.

In space syntax terms (see Annexe B for full description), spatial configuration refers to the part-to-whole relationship of a system; in this case, the parts are urban streets where the whole is the city as a spatial network (Hillier 1996). Space syntax analysis was used to provide a coherent means of measuring both distances and accessibility in the context of the city and relating these to various other aspects of the urban land nexus. The key space syntax measures used were: spatial integration (referred to as accessibility for this study); spatial segregation; and movement potential. These highlight the inherent characteristics of the spatial configuration of a city's street network. Space syntax analysis shows the emergence of three underlying features of the urban form that are comparable across both cities (and Khartoum as well, as described in Section 3).

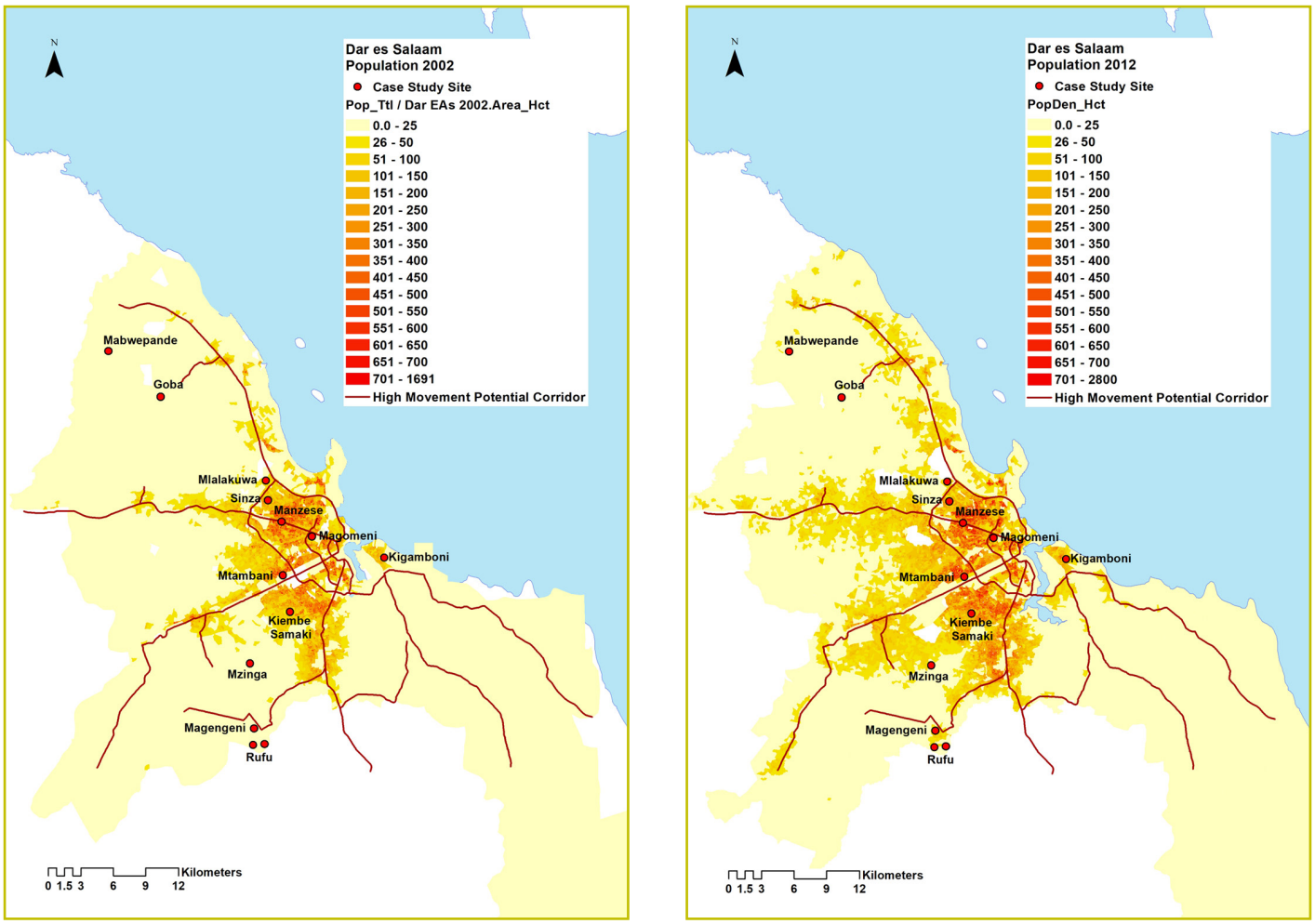
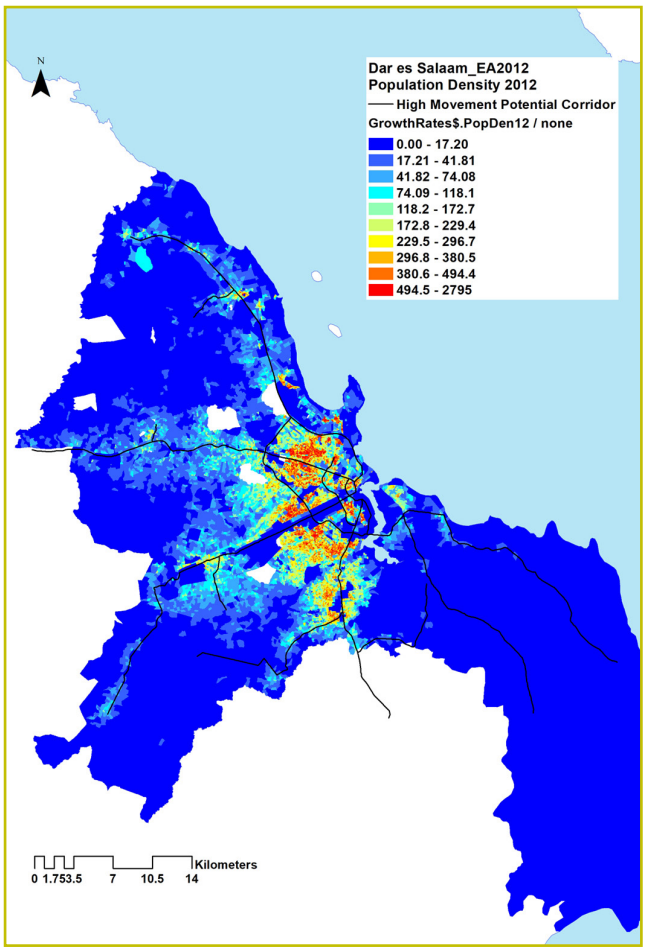


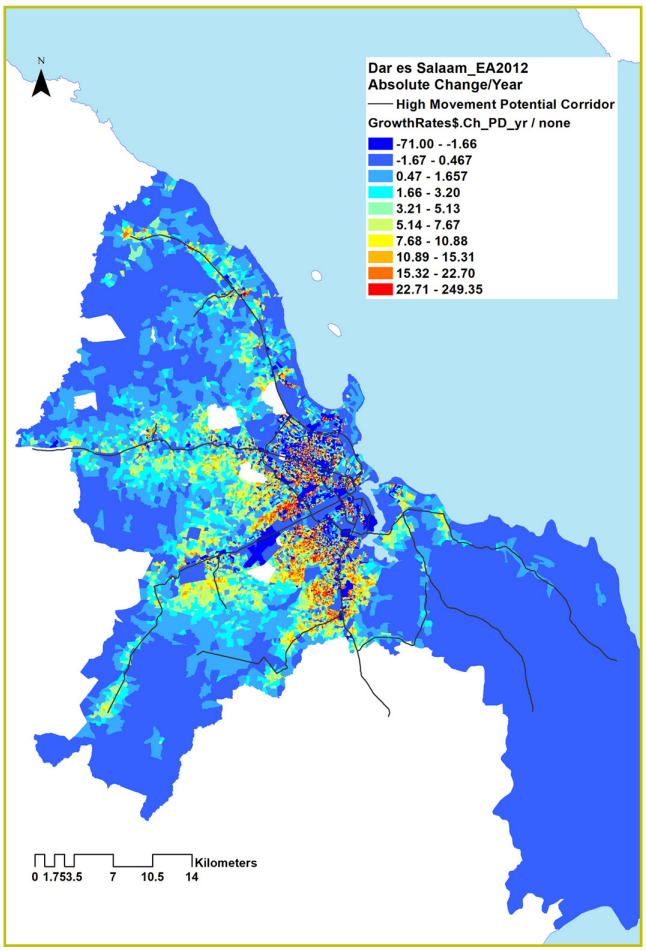

**Figure 2** Population densities, Dar es Salaam for 2002 and 2012

These are (i) highly accessible radials that connect the centre of each city to the periphery and the region beyond like the spokes of a bicycle wheel; (ii) the use of ring roads to connect these radials and contain the outward sprawl of the city; and (iii) a highly integrated or well-connected city centre with highly spatially segregated peripheral neighbourhoods. The radials, in combination with the ring roads, form the underlying network of *high movement potential* streets that facilitate the movement of people and things around the cities (see Figure 1).

Administratively, the Tanzanian cities are divided into municipalities, which are further divided into wards that in turn are subdivided into *mtaas*. For the purposes of data collection during censuses, the smallest administrative unit is an enumeration area (EA). A significant part of the data analysis and mapping for both Dar es Salaam and Mwanza has been based on EA-level statistics. Settlements in Dar es Salaam have been categorised into four types: planned, consolidated informal, unconsolidated informal, and dispersed housing. Distances for both cities from the city centre have been calculated 'as the crow flies' from their respective State House.

Whilst spatial characteristics, in terms of accessibility and movement potential, may naturally benefit certain land uses, spatial features like accessibility, connectivity, and proximity to services, the city centre and livelihoods cannot be commodified but do influence land values/pricing, population densities and



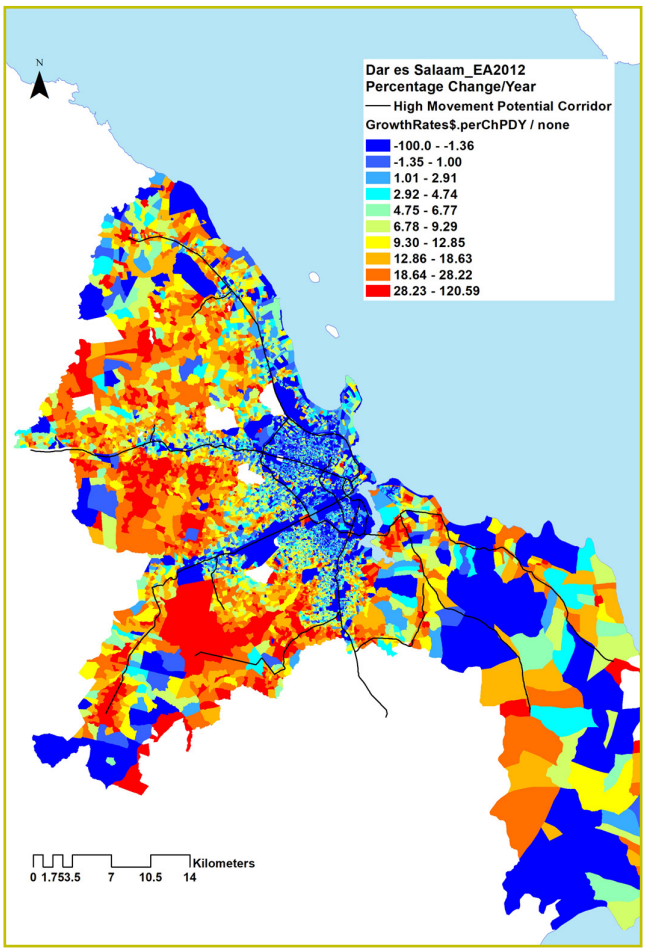




**Figure 3** Dar es Salaam – population density 2012 (top left), absolute annual population density increase (top right), and percentage population growth rate (below right). The intervals are based on deciles of enumeration areas ranked by the displayed variables.

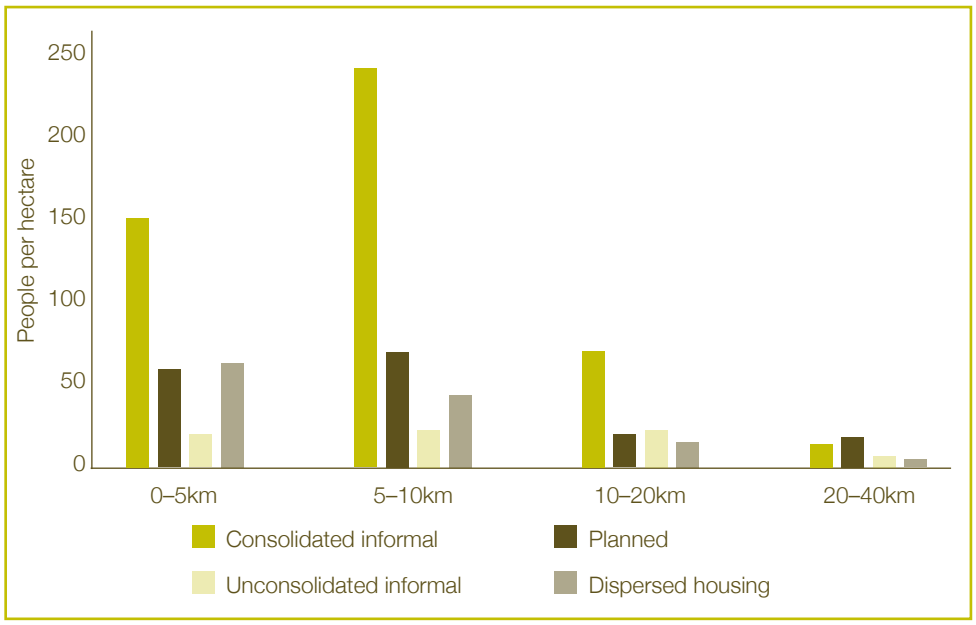



**Figure 4** Dar es Salaam – population density by settlement type and distance from the city centre in kilometres.

the socioeconomic characteristic of a neighbourhood. This commodification of land within a spatial network plays a role in urban processes like densification, gentrification, re-planning and resettlement (and self-builders), and spatial segregation and social exclusion. That many of the costs and benefits of spatial locations cannot be commodified, makes the commodification of land a contradictory and contentious process.

### 2.2.1 *Population densities and distributions*

Upon analysing the patterns of growth and densification, it can be seen that high movement potential streets often become the main 'corridors of development' through both cities: the cities are growing outwards along these arterial routes whilst simultaneously filling out the interstitial spaces between them, often facilitated by streets moving transversally, particularly closer to the city centre. The high accessibility of all three city centres and high spatial segregation of peripheral regions reinforces high population densities close to a core central area whose density is reduced by commercial and other non-residential uses. Densities then dissipate as distance from the city centre and arterial roads increases. This is best illustrated by analysing census data for Dar es Salaam for 2002 and 2012 (see Figure 2).[2] Here, 45 per cent of the population is located within 10km of the city centre – as the crow flies – with particularly high population densities being recorded between the two inner ring roads, i.e. 5–10km from the city centre.

As can be seen from Figure 3 (top left), population density in the absolute city centre is quite low. The highest densities are located further out (between the two ring roads in the case of Dar es Salaam and over 1km away from the city centre in the case of Mwanza; see Annexe D for comparison), with annual

2 Unless otherwise stated, the figures and tables have been generated from data provided by the National Bureau of Statistics, Tanzania through Ardhi University, and the maps were generated and coordinated by the Institute of Development Studies.

increases in population per hectare being highest even further out (Figure 3, top right). The fastest percentage population growth rates are in areas closer to the peripheries of Dar es Salaam (Figure 3, below right).

As stated above, populations clustered within EAs were further sorted by settlement type in Dar es Salaam and distance from the city centre. This aggregation of population density data by settlement type showed that highly consolidated informal settlements are often more than three times more dense than planned areas within the same radial band up to 20km from the centre, at which point they drop below those of the planned areas within the same radial band (see Figure 4).

### 2.2.2 *Spatial segregation and mobility*

Spatial segregation in Dar es Salaam in particular has a long history: during colonial rule, policies dictated where different ethnic groups – Europeans, Indians, Arabs, and Africans – could buy or be allotted property in the city (Kironde 2007). Europeans, Arabs, and Indians occupied prime real estate, whilst Black Africans were relegated to peripheral areas. This ethno-spatial segregation therefore exhibited an economic bias as well. Whilst these ethnicity-based policies no longer exist, spatio-economic segregation at the scale of the city seems to persist, which ties into spatial segregation based on accessibility, mobility, and land values.

Using space syntax analysis in this section allows for a more nuanced exploration of terms like 'proximity' and 'accessibility' in the context of urban form. As-the-crow-flies distances may show parts of the city as being close to the city centre or a public service like a major bus link, giving the impression of a place being well connected or easy to reach. However, when accessibility through the road/path network of the city is mapped and analysed, things may appear quite differently; whilst an informal settlement may be proximate to a main road, navigating and accessing the interior of the settlement may be a tricky and time-consuming endeavour, adding to travel times and costs for local residents. This can best be illustrated by an analysis of the street networks. Whilst Dar es Salaam is a large and therefore complex system, in Mwanza, despite being small in comparison, the accessibility of much of the city is undermined by its hilly topography. This is reflected in the lack of mapped streets in the hillier parts of the city and the informality of many of these areas, as per the Mwanza Master Plan (2016). It should be noted that based on overlaying the informal settlements and population estimates from the 2012 census, 49 per cent of Mwanza's population resided in identified informal settlements, though the master plan (*ibid*.: 27) gives a figure of 70 per cent in unplanned and unserviced settlements.

Figure 5 shows the proximity of all EAs to the city centre (left); the proximity to high movement potential corridors (middle); and the accessibility of all EAs (right). Analysing how accessible each street segment is to all other street segments within the city network shows that in fact whilst a settlement may be proximate to the city centre or a high movement potential corridor, areas within the settlement may be hard to reach and quite spatially segregated. Further analysis of proximities shows that there are higher population densities in areas that are close to high movement potential corridors. Mapping the 2012 census

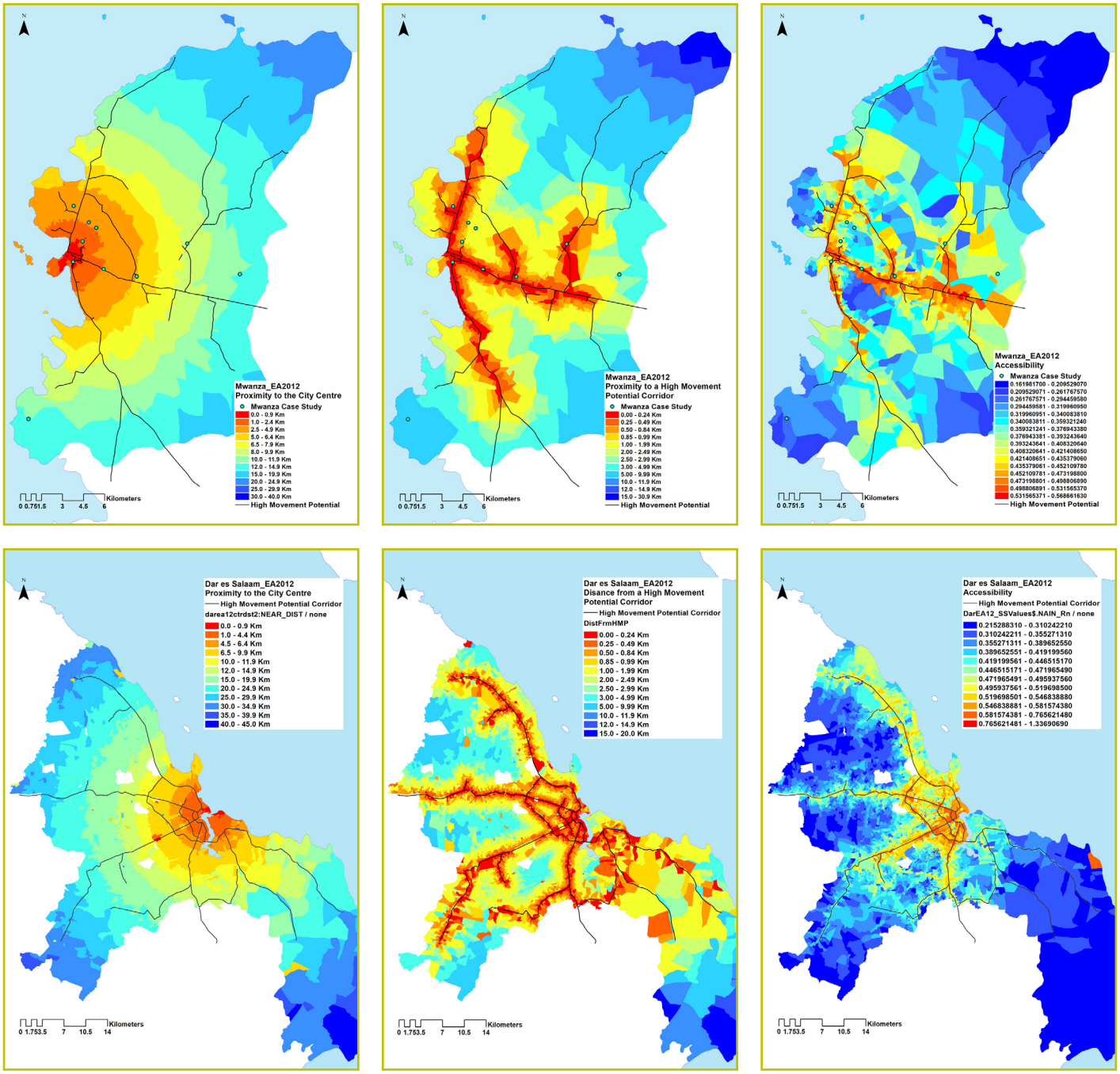



**Figure 5** Mwanza and Dar es Salaam – proximity to the city centre (left), proximity to a high movement potential corridor (middle), and citywide accessibility (right)

revealed that 46 per cent of the population was living within a 5km radius of the city centre, which is just over 10 per cent of the total land area of Mwanza – but as in Dar es Salaam, the density maps also indicate population being 'pulled' out alongside the main arterial roads.[3] Mwanza's smaller and older city centre, much like that of Dar es Salaam, exhibits a reasonably low population density; the average population density of EAs within a 1km radius from the city centre is 95 people per hectare.

3 See Annexe D.

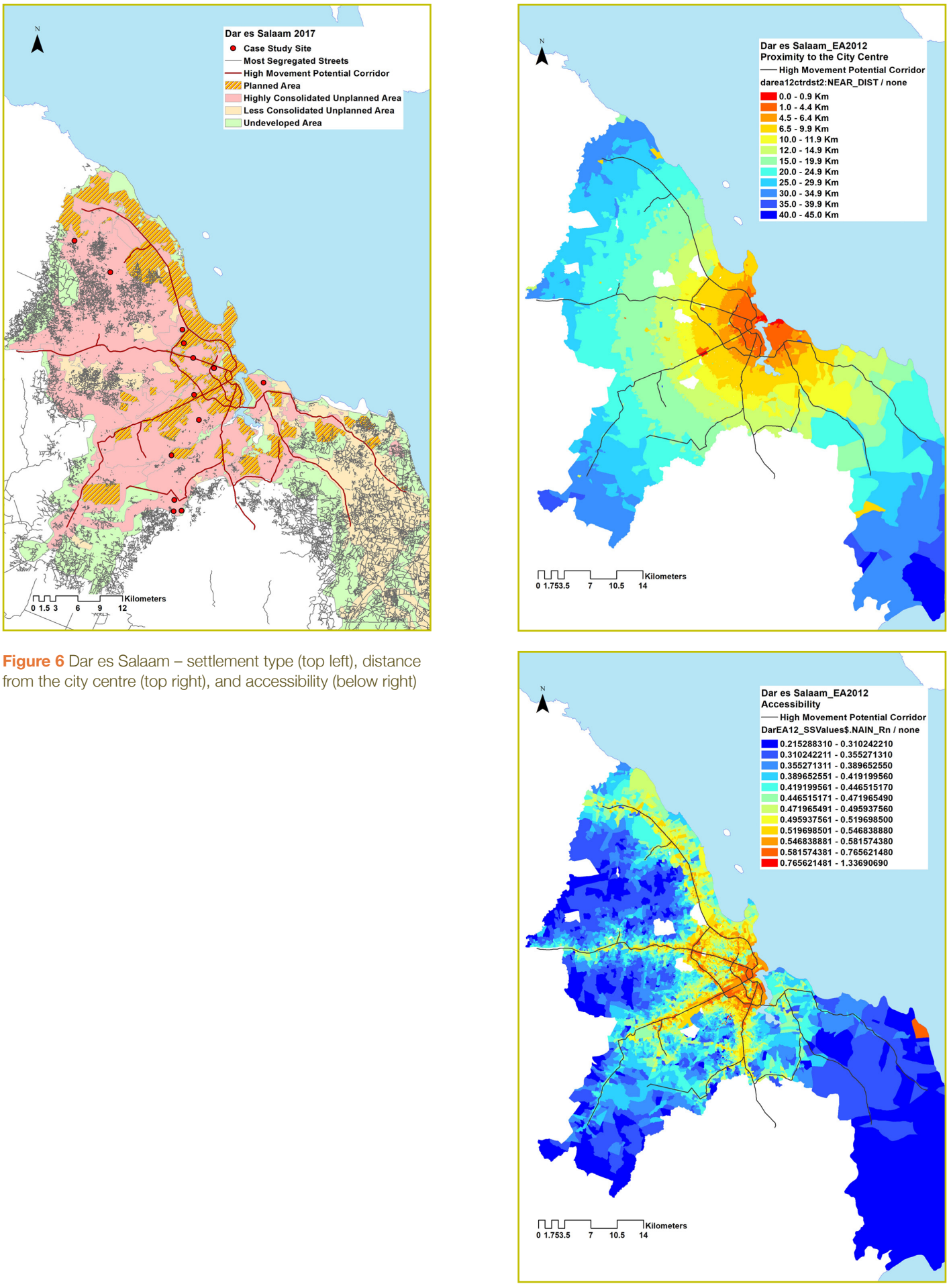
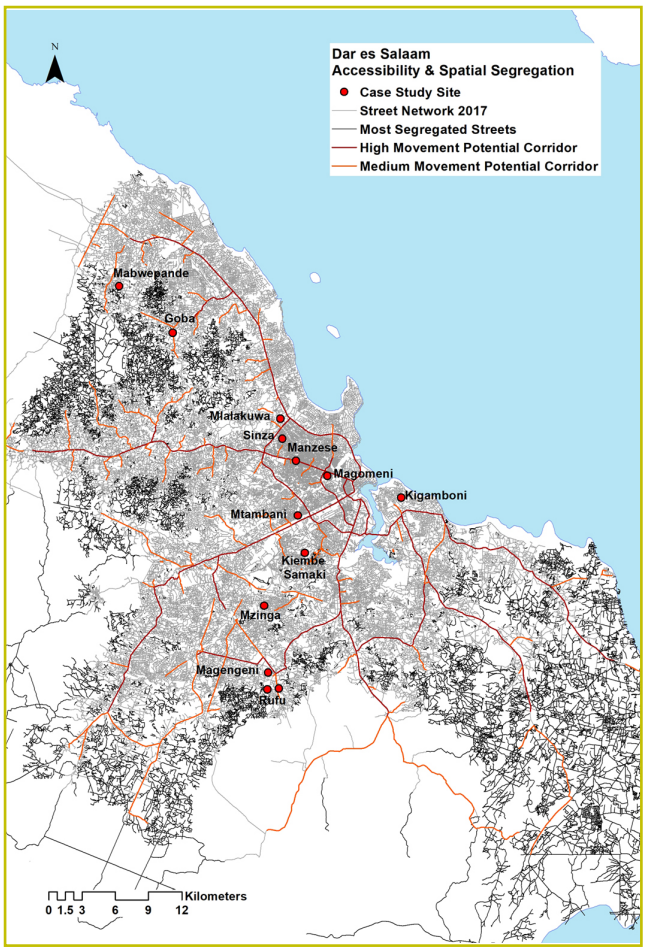
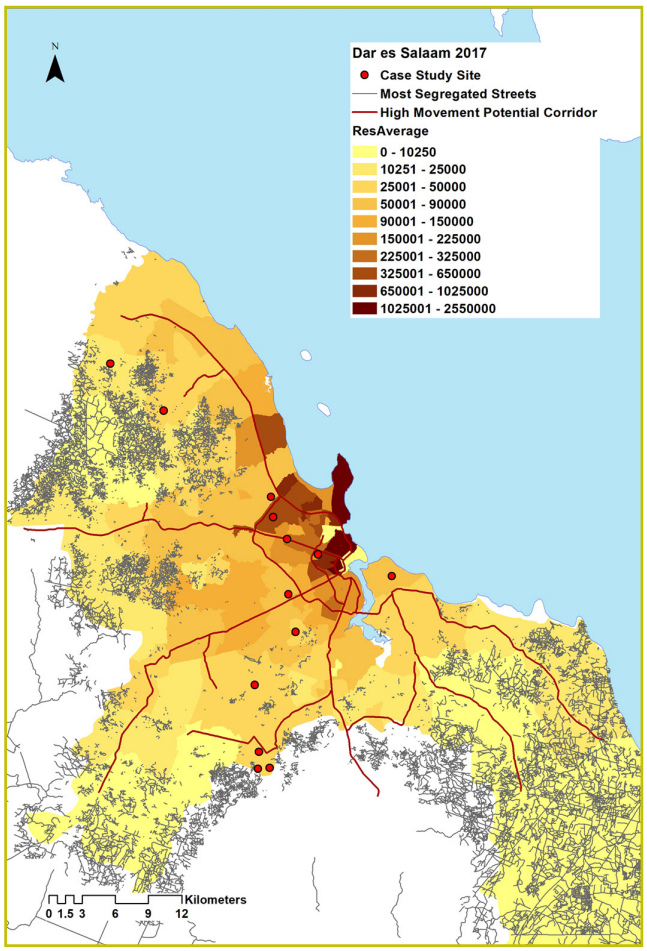



**Figure 6** Dar es Salaam – settlement type (top left), distance from the city centre (top right), and accessibility (below right)



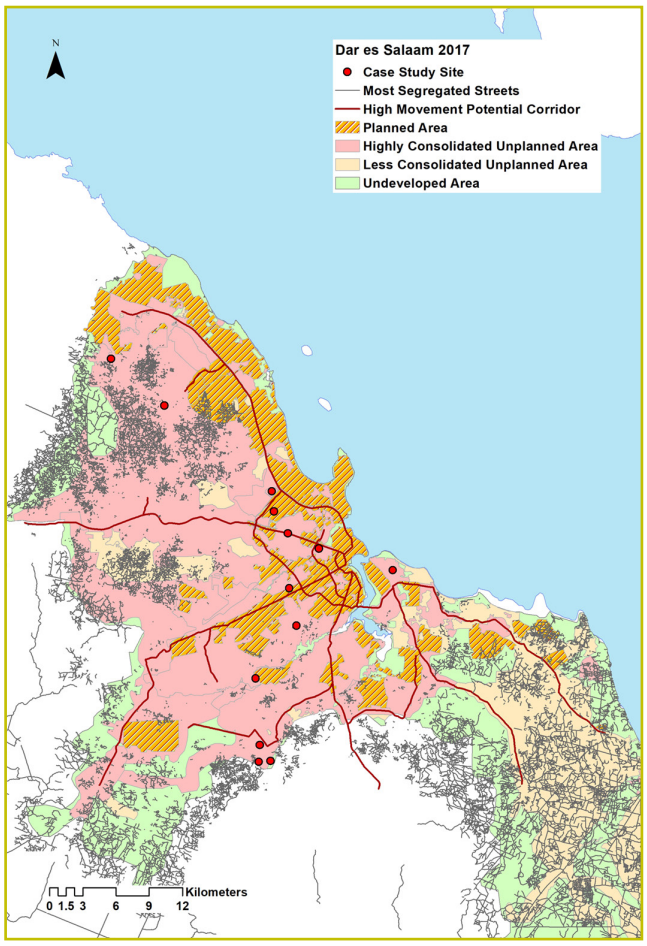




**Figure 7** Dar es Salaam – accessibility and segregation (top left), residential land values (top right), and settlement type (right), 2017

Areas in both city centres are occupied primarily by low-density planned settlements and commercial and administrative institutions with informal settlements beginning to appear further out.

In both cities, the major bus routes (*daladala)* coincide with high movement potential corridors. This overlap of city form and transport provision is significant to the discussion around proximity and accessibility. In the case of Mwanza, for example, whilst the city centre is reasonably low density, the average distance of EAs with population densities upwards of 200 people per hectare from a high movement potential corridor was 0.52km; i.e. people from higher density areas (often informal settlements) overall travel on average 500 metres to access a bus route. This suggests an emphasis by the city's population on access to a major bus route/high movement potential corridor being as important as proximity to the city centre. That being said, distance from the city centre can be particularly important to low-income residents wanting to pick up casual work there whilst also minimising the number of bus changes needed to complete their daily commute.

By relating the planned/unplanned areas to an accessibility map of the city of Dar es Salaam, it becomes apparent that the planned neighbourhoods of the city are far more accessible than their unplanned counterparts, even those high-density inner-city unplanned settlements. Again, whilst unplanned areas may be proximate to the city centre (and by extension commercial and institutional centres), they may not be particularly accessible, as shown in Figure 6). Moreover, the opposite is true of planned areas; they can display high accessibility despite reduced proximity, particularly along the north-western coast of the city. One needs to also consider the relevance of this accessibility in neighbourhoods where residents are perhaps not as reliant on public transport options for their daily commutes as those resident in more unplanned areas.

The spectrum of spatial accessibility to spatial segregation is mirrored by residential land values for Dar es Salaam with the asking price for areas closest to the city centre and major thoroughfares being higher whilst peripheral areas are more affordable (see Figure 7). It should be noted that in terms of growth and development processes, this 'affordability' plays out in two ways. Firstly, it is in these lower-cost localities that many resettlement projects are located in the case of both Dar es Salaam and Mwanza – centrally located low-income communities have been relocated to peripheral areas often due to environmental hazards. Secondly, it is in these areas that middle-income self-builders looking to own their property can afford to buy and build, thus voluntarily moving out of the city centre (see case studies in Section 2.4). This combination of processes often gives rise to an interesting economic mix of owner-occupiers, tenants, and squatters in peri-urban areas.

### 2.2.3 *Informal settlements, planning, and formalisation*

When analysing the population distribution and densities across the four settlement types for 2012, it becomes apparent that densities are far higher in consolidated informal settlements than in planned areas. This is the result of larger populations living in much smaller areas: 53 per cent of the city's population lived on 12.5 per cent of the total land area designated as

consolidated informal settlement, whilst only 19 per cent lived on 14 per cent of the area that was classified as planned in the context of this study. As stated above, in 2012 the bulk of consolidated informal settlements were concentrated within a 10km radius of the city centre, and densities for all categories dropped dramatically beyond this point even though no EAs showed densities that may be categorised as 'rural' (three or fewer people per hectare), unlike peripheral EAs in Mwanza for 2012.

In Dar es Salaam, for the period 2002–17 planned settlements appear to have developed primarily along the seafront and Bagamoyo Road to the north-west of the city, whilst consolidated informal settlements have grown and densified between arterial radials outwards from Kigogo Road (Dar es Salaam's inner ring road). It will be interesting to see the kind of development that the opening of the new Kigamboni Bridge will trigger in Dar es Salaam's Kigamboni and Temeke municipalities (after the failure of the Kigamboni New City proposal, described in Section 2.4.4).

When discussing the growth and development of Mwanza, the topography of the city needs to be taken into account. Unlike Dar es Salaam, Mwanza is a city with many rocky hills; its steep hills limit the kind of development that can take place, and much of the hilly localities are occupied by low-rise informal settlements. This limitation in terms of topography has in turn dictated, to a degree, the directions of growth for the city.

The Mwanza Master Plan is particularly ambitious, and was developed with considerable grass-roots involvement, but it remains unclear how the planned projects and land use changes will be funded and implemented. In relation to informality, for example, it presents addressing informal settlement as a 'mammoth task' (URT 2016a: 123). It maps 53 'informal settlements', but only identifies 14 for improvement, of which only four are considered suitable for *in situ* upgrading (the rest being redeveloped).

Another feature of how planning and growth differs between the two cities is the way they have approached their waterfront development. Dar es Salaam has capitalised on its coastline with its planned development settlements stretching northward from the city centre almost to the city limits. Mwanza, on the other hand, has very little planned waterfront development; much of this area is occupied by either unplanned settlements or remains undeveloped. This difference in approach is interesting considering waterfront land values in the two cities; land values of waterfront *mtaas* are higher in Mwanza than those in Dar es Salaam, yet Mwanza's remain unplanned.

This suggests that in the case of both Mwanza and Dar es Salaam, land value seems to be a more nuanced issue than a simple relationship between location and/or the nature of planning the settlement. A number of features of the urban land nexus impact it directly, and these may include whether the settlement is planned or unplanned, proximity to the city centre, proximity to a major road, or access to other services like water or public transport.

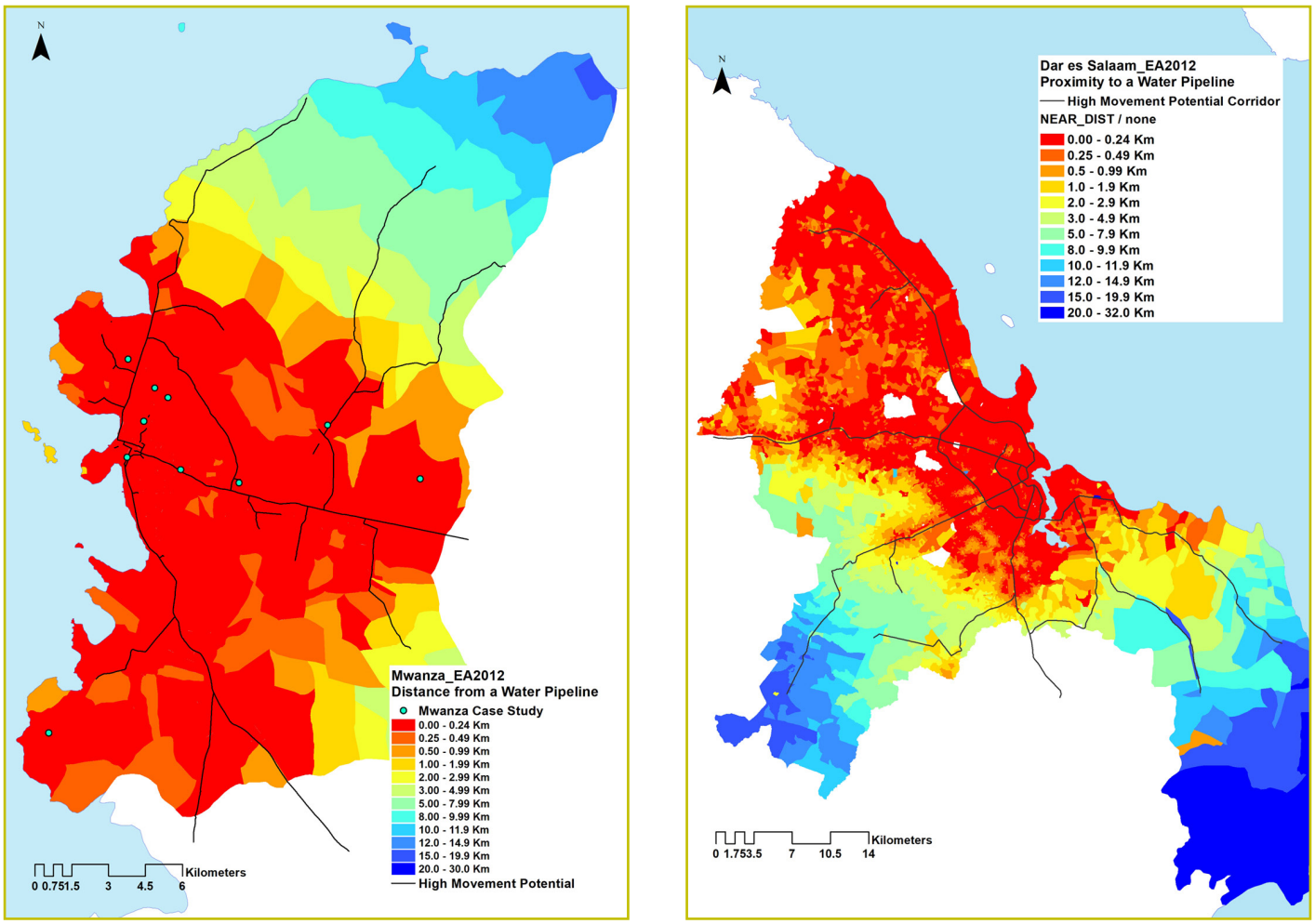



**Figure 8** Distance from a utility company-laid water pipeline in Mwanza (left) and Dar es Salaam. Source: Data on water supply networks for Mwanza and Dar es Salaam provided by MWAUWASA and DAWASA respectively through Ardhi University. Maps generated and coordinated by the Institute of Development Studies.

### 2.2.4 *Piped water and sewer systems*

The provision of piped water appears to be one service where Mwanza outperforms Dar es Salaam. Mwanza Urban Water Supply and Sanitation Authority (MWAUWASA) maps show that the city has comprehensive coverage and, according to the 2012 census results, 63 per cent of the population lived in EAs whose centres were within 100 metres of a MWAUWASA-laid pipeline, and a slightly higher 67 per cent of the population had network water piped to their plot or home. In Dar es Salaam, on the other hand, only 40 per cent of the population lived in EAs whose centres were within 100 metres of a utility pipeline, and an even lower 34 per cent had network water piped to their home or plot. In both cities, the networks are more present in the planned settlements (see Figure 8).

Sewer coverage is far lower than piped water: according to the 2012 census it was around 6 per cent in both cities. Estimates from the same census of coverage used in monitoring the Millennium Development Goal sanitation target suggested far higher levels of coverage with 'improved sanitation': 92 per cent in Dar es Salaam and 78 per cent in Mwanza. However, the difference was largely made up of varieties of pit latrines whose suitability to urban uses is doubtful (internationally, sanitation coverage has at least until recently been estimated assuming that pit latrines with slabs are 'improved'). The newly

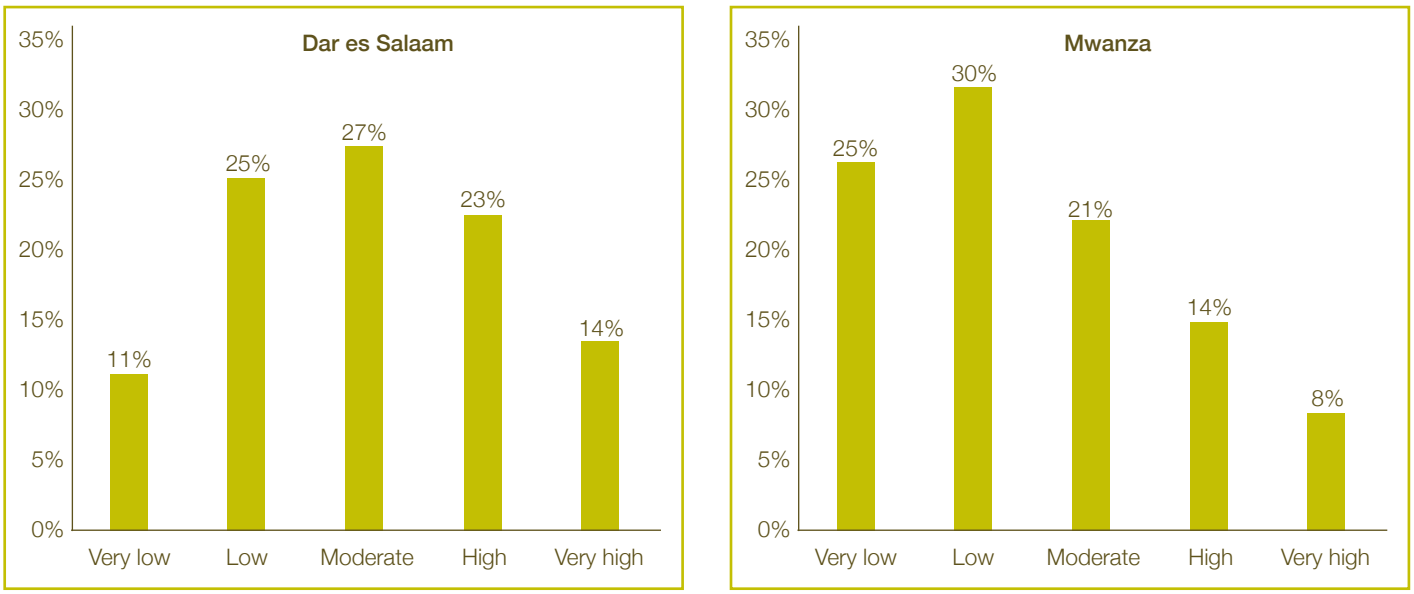



**Figure 9** Distribution of residents of Dar es Salaam and Mwanza by socioeconomic class

introduced criterion of safe disposal of faecal sludge would render the coverage levels for both cities far lower. The sanitation hazards of pit latrines depend on emptying practices, and can be exacerbated by high water tables (particularly in Dar es Salaam), or hilly topographies (particularly in Mwanza). MWAUWASA is in the process of working with low-income communities to implement simplified sanitation to improve the situation in some of Mwanza's rocky hillside communities, with three pilot projects already connected and a further six currently proposed.

## 2.3 Vulnerable groups and how they are situated in the urban land nexus

### 2.3.1 *Introduction*

Where people live in a city can both reflect and affect their vulnerability. The poorest groups in a rapidly growing city will tend to be pushed to live in low-cost accommodation in locations characterised by some combination of: physical hazard; spatial isolation; overcrowding; insecure tenure; service deprivation; and neighbourhood problems. There are exceptions, such as poor migrants or others staying with wealthier relatives until they can find their feet, servants living with their wealthier employers, and other disadvantaged individuals living in better-off households. For this study, in addition to people who are vulnerable on account of their poverty, we chose to focus on vulnerability related to gender, migratory status, and tenure status, which tend to be particularly serious when reinforced by economic and location and/or shelter-related vulnerabilities.

This section relies heavily on the 2012 census, which is now somewhat outdated but remains a rare source of accurate information linking populations to places. Section 2.3.2 develops an index of disadvantage–advantage, which is then used in the subsections that follow. These cover tenants, migrants, and gender, though unlike the other vulnerabilities, gender discrimination and disadvantage does not manifest itself in spatial segregations within the land nexus.

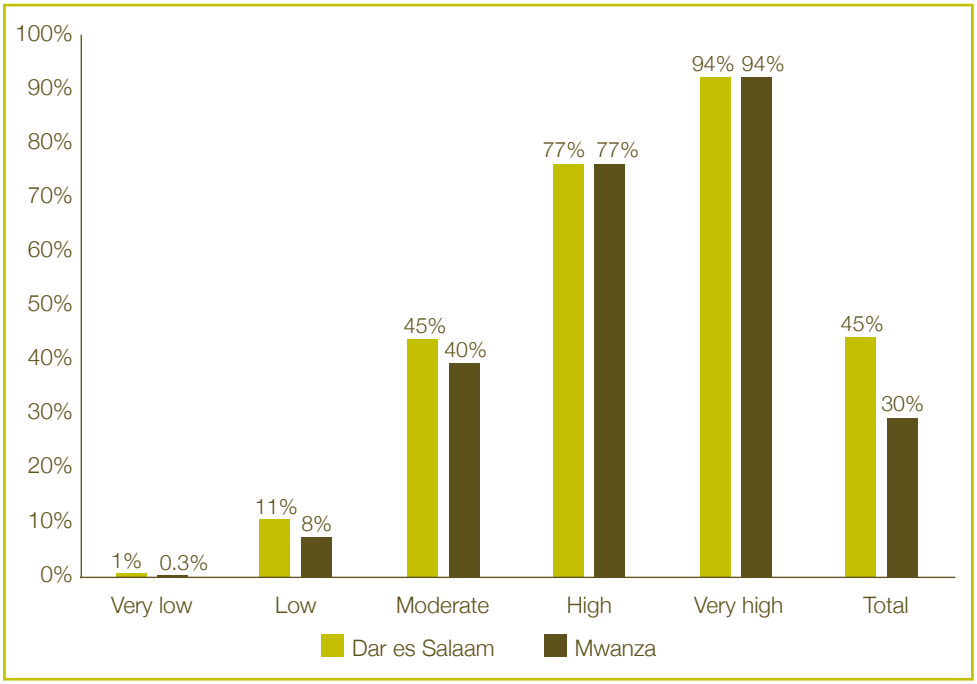



**Figure 10** Percentage of residents in households with an electric iron by household class for Mwanza and Dar es Salaam, 2012

### 2.3.2 *Identifying the socioeconomically advantaged and disadvantaged*

Data from the 2012 census was used to class households and their residents by their level of disadvantage–advantage. The approach is similar to that of the multidimensional poverty index (MPI) (Alkire and Santos 2010), but is (1) more *ad hoc* and specific to Mwanza and Dar es Salaam; (2) designed to classify household members into five classes, less to more advantaged (rather than counting those living in acute poverty); and (3) rather than health, education, and standard of living as in the MPI, we chose human capital, ownership of consumer durables, and the quality of the residence and how it is serviced. A point was given for specified characteristics (e.g. having a certain level of education, owning an item, or having a home with a certain feature), such that a maximum of four points could be obtained from human capital, five from ownership of consumer durables, and five from the quality of the residence and its services. Indicators of land nexus outcomes that the research was designed to explore, such as access to water and sanitation, were not included in the index. The fewer the points, the more disadvantaged the people in the households.

As illustrated in Figure 9, Dar es Salaam's population is spread out symmetrically over the five classes, with somewhat lower shares in the least (11 per cent) and most advantaged (14 per cent) classes, and peaking in the middle-class (27 per cent). Mwanza's population is more concentrated in the less advantaged classes, with 25 per cent in the most disadvantaged class, 30 per cent in the next most disadvantaged class, and only 8 per cent in the most advantaged class. This reflects Dar es Salaam being a considerably larger and wealthier city.

To provide an example of how well the classification works with an easily purchased device (not included in the index), Figure 10 presents the share of people in households with electric irons for each of the five classes. The overall ownership rate is considerably lower in Mwanza (30 per cent) than in

Dar es Salaam (45 per cent), as Mwanza is the poorer city. On the other hand, ownership rates are close within each class.

If we take the two most disadvantaged classes in each city, and consider where they are living in the city, they will include 37 per cent of Dar es Salaam's population, but 56 per cent of Mwanza's. As illustrated in Table 1, in both cities the more disadvantaged classes are less likely to live close to the city, but the density differences are not very large (except for the somewhat higher likelihood for advantaged classes to be in a settlement of over 200 people per hectare). On the other hand, the differences between the cities are very large, with the likelihood of living close to the centre much lower in Dar es Salaam, but the likelihood of living a dense neighbourhood far higher. For Dar es Salaam, the disadvantaged classes are somewhat more likely to live in informal settlements, but even in the more advantaged three classes combined, the majority live in informal settlements.

**Table 1 Percentage of population with selected neighbourhood characteristics by class category – Dar es Salaam, 2012[4]**

| Neighbourhood characteristic | More disadvantaged (classes 1–2) | More advantaged (classes 3–5) | Overall |
|---|---|---|---|
| Dar es Salaam | | | |
| <5km from centre | 8 | 16 | 13 |
| <10km from centre | 46 | 60 | 55 |
| >200 people/hectare | 44 | 50 | 48 |
| >400 people/hectare | 20 | 19 | 19 |
| Informal | 66 | 59 | 62 |
| Mwanza | | | |
| <5km from centre | 45 | 52 | 48 |
| <10km from centre | 76 | 92 | 83 |
| >200 people/hectare | 18 | 21 | 19 |
| >400 people/hectare | 3 | 2 | 3 |
| Informal | NA | NA | NA |

### 2.3.3 *Tenants and tenure insecurity*

It is often assumed that tenants are both poor and vulnerable. But tenants are common in all classes in both cities. As indicated in Figure 11, private rentals accommodate about 41 per cent of the population in Dar es Salaam and 37 per cent in Mwanza (as tenant households tend to be smaller than others, the share of households that are tenants is considerably higher). Even in the highest classes, the population shares that are tenants are 31 per cent in Dar es Salaam and 28 per cent in Mwanza, and in the lowest two classes the

4 This and remaining tables on Dar es Salaam and Mwanza are from '10 per cent' subsamples of the census. Neighbourhoods are spatially defined as enumeration areas (EAs).

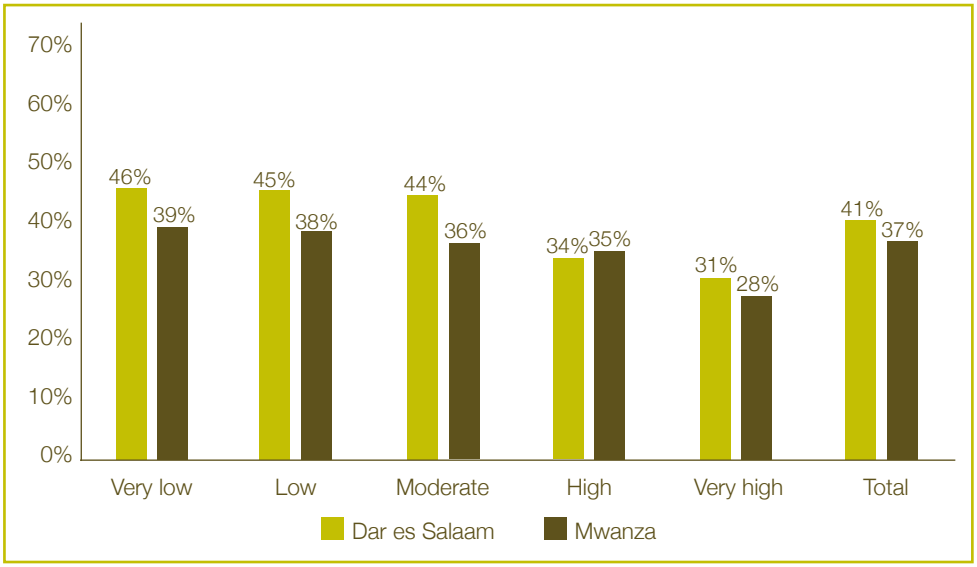



**Figure 11** Percentage of residents that are in tenant households by class, 2012

shares rise to 46 per cent in Dar es Salaam and 39 per cent in Mwanza. Clearly, renting is not just for those who cannot afford to own a home, even if rates are somewhat higher among disadvantaged tenants. For reasons described in more detail in later sections, it is the tenants in the less advantaged classes that are a particularly vulnerable group, and one that can be very difficult to protect, as policies that punish landlords for raising rents or not providing adequate facilities are not only resisted by landlords, but are in danger of reducing supplies and increasing rents over the longer term.

**Table 2 Percentage of population with selected neighbourhood characteristics by tenant and class status – Dar es Salaam, 2012**

| Type of settlement | More disadvantaged (classes 1–2) | | More advantaged (classes 3–5) | |
|---|---|---|---|---|
| | Tenants | Others | Tenants | Others |
| **Dar es Salaam** | | | | |
| <5km from centre | 9 | 7 | 20 | 14 |
| <10km from centre | 60 | 36 | 68 | 55 |
| >200 people/hectare | 59 | 32 | 57 | 45 |
| >400 people/hectare | 28 | 14 | 23 | 17 |
| Informal | 73 | 61 | 59 | 59 |
| **Mwanza** | | | | |
| <5km from centre | 52 | 40 | 57 | 50 |
| <10km from centre | 85 | 70 | 95 | 90 |
| >200 people/hectare | 25 | 14 | 21 | 21 |
| >400 people/hectare | 4 | 2 | 3 | 2 |
| Informal | NA | NA | NA | NA |

**Table 3 Percentage of population with different housing tenures by status of settlement – Dar es Salaam, 2012**

| Tenure form | Planned settlement | Consolidated informal settlements | Unconsolidated informal settlements | Unclassified | Overall |
|---|---|---|---|---|---|
| Own house with land title or licence | 29 | 37 | 29 | 25 | 32 |
| Own house with other land rights | 10 | 6 | 21 | 20 | 11 |
| Own house without land rights | 7 | 5 | 12 | 20 | 8 |
| Rent privately | 40 | 45 | 29 | 28 | 40 |
| Other | 14 | 8 | 10 | 8 | 10 |
| **Total** | **100%** | **100%** | **100%** | **100%** | **100%** |

As illustrated in Table 2, tenants in both cities are more likely than other residents to be centrally located. They are also likely to live at high densities, with much larger differences among those in the more disadvantaged classes – and almost no differences among the more advantaged classes in Mwanza. In Dar es Salaam, tenants are also more likely to be living in informal settlements.

While owner-occupiers are generally better protected from land nexus pressures, not living in planned areas and not having titles or licences to the land reduce this protection. As described in Section 2.4.2, even informally recognised claims to land can be the basis for land rights in Tanzania, but a lack of planning, a lack of surveyed property boundaries, and a lack of legal instruments demonstrating ownership all increase risks of uncompensated displacement. Unplanned housing is more likely to be deemed uninhabitable, illegitimate, suitable for redevelopment, or in the path of infrastructure or other development projects. Structure owners who do not have clear evidence of rights to the land are more susceptible to land disputes.

The lack of a formal title or licence is higher among less advantaged classes. However, as illustrated in Table 3 for Dar es Salaam, it can be common in planned areas, and indeed the highest share claiming to have land titles is in the consolidated informal settlements. For 85 per cent of people living in owner-occupied housing in the city, the household claims some right to the land, and 64 per cent live in households claiming to have a land title or licence. In the planned areas, the figures are almost the same. But for those in owner-occupied housing in consolidated informal settlements, 90 per cent of the population lives in households that claimed to have some right to the land, and a full 78 per cent claimed to have titles or licences. It is in the unconsolidated informal areas and unclassified areas that the land claims are less.

In Mwanza, 77 per cent claim some right to the land, but only 45 per cent claim to have a land title or licence. On the other hand, in Mwanza customary landownership provides the basis for the claims of 15 per cent of those in owner-occupied homes, as compared with about 9 per cent in Dar es Salaam.

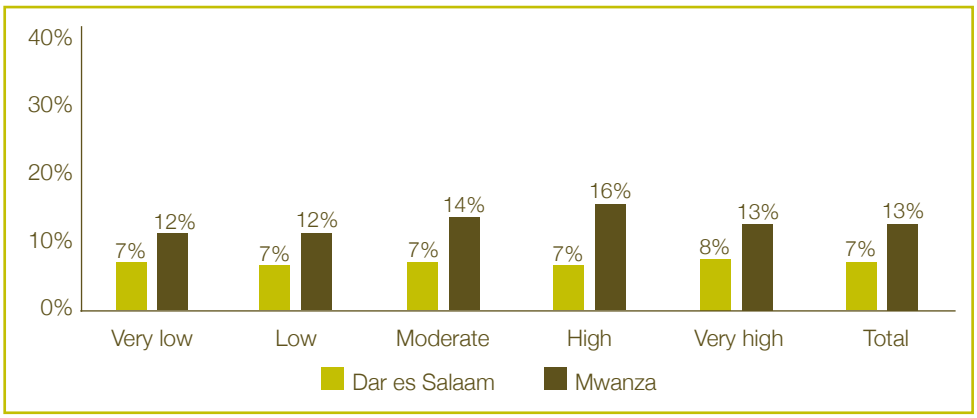



**Figure 12** Percentage of residents not living in city-region a year previously, 2012

### 2.3.4 *Migrants*

When countries are urbanising rapidly, and a city's informal settlements are growing alarmingly, it is common to blame this growth on poor rural migrants. Such concerns can be amplified by expert pronouncements – as in the subtitle of a chapter in the leading urban economics handbook, 'Cities in Developing Countries: Fueled by Rural–Urban Migration, Lacking in Tenure Security, and Short of Affordable Housing' (Brueckner and Lall 2015). With the estimated national population growth rate now 3.1 per cent, and city growth rates of 5.4 per cent for Dar as Salaam and 5.8 per cent for Mwanza, it is unlikely that migration accounts for much over half of the cities' growth (though the 2012 census data indicate that the natural growth rates in these two cities is closer to 2 per cent). In any case, neither long-term nor recent migrants in these cities are concentrated in the disadvantaged classes.

As Figure 12 and Figure 13 illustrate, in both Mwanza and Dar es Salaam both those not born in the city and those who lived away from the city a year before are quite evenly spread across the socioeconomic classes, with – if anything – a slightly higher share of migrants in some of the more advantaged classes.

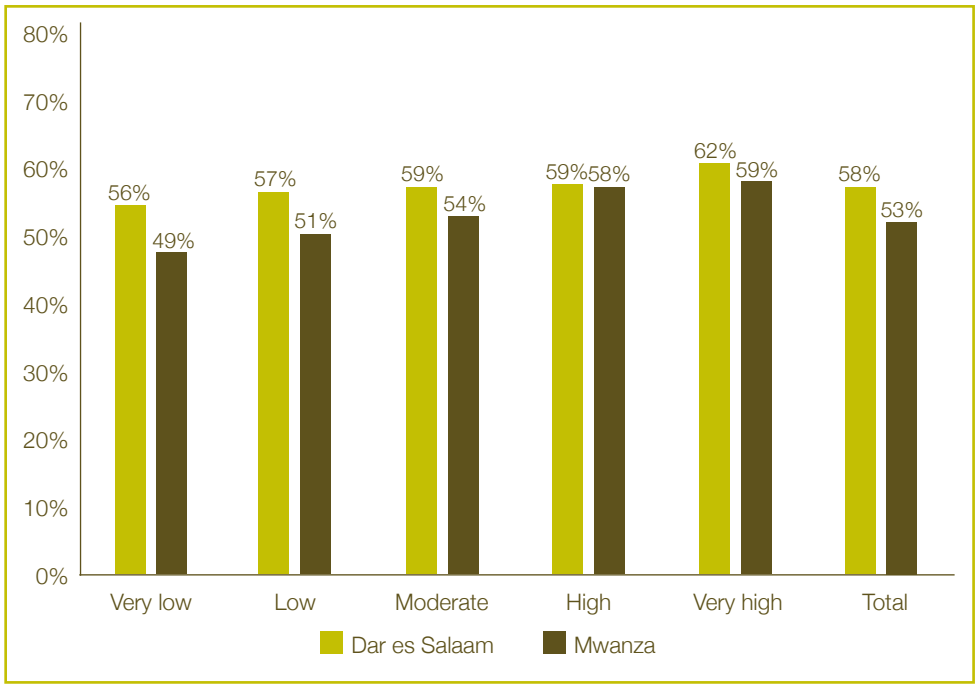



**Figure 13** Percentage of residents not born in city by class, 2012

In contrast to the relatively small class differences among groups with a different migratory status, as illustrated above, there are sharper differences in tenurial status. In both cities, both those not born in the city and recent migrants are more likely to be private tenants, and less likely to own their houses, either with or without rights to the land.

**Table 4 Percentage of residents with different house tenures by migratory status[5]**

| | Birth migrant | Recent migrant | Not birth or recent migrant |
|---|---|---|---|
| **Dar es Salaam** | | | |
| Own house with land title or licence | 28 | 27 | 38 |
| Own house with other land rights | 9 | 8 | 12 |
| Own house without land rights | 7 | 6 | 9 |
| Rent privately | 46 | 47 | 32 |
| Other | 11 | 12 | 9 |
| **Total** | **100%** | **100%** | **100%** |
| **Mwanza** | | | |
| Own house with land title or licence | 24 | 24 | 28 |
| Own house with other land rights | 15 | 17 | 23 |
| Own house without land rights | 10 | 7 | 16 |
| Rent privately | 45 | 45 | 28 |
| Other | 7 | 7 | 5 |
| **Total** | **100%** | **100%** | **100%** |

Table 5 summarises the differences between recent migrants and others, now distinguishing also between recent migrants in different socioeconomic classes. In Dar es Salaam, those in the lower classes are those most likely to rent, and to live more than 10km from the city centre. They are also the most likely to rent in Mwanza, but are as likely as any group to live within 5km from the centre. While this may reflect the different sizes of the cities, it could also reflect many low socioeconomic status recent migrants to Mwanza settling in the rocky hills near the centre of town.

5 'Birth migrants' are those not born in the city (though in the case of Mwanza they may have been born in Mwanza Region). 'Recent migrants' are those not residing in the city a year prior to the census.

**Table 5 Population percentages living in different sorts of locations or accommodation**

| | More disadvantaged (classes 1–2) | | More advantaged (classes 3–5) | |
|---|---|---|---|---|
| | Recent migrants | Others | Recent migrants | Others |
| **Dar es Salaam** | | | | |
| Private rental accommodation | 55 | 45 | 42 | 38 |
| <5km from centre | 8 | 8 | 19 | 16 |
| <10km from centre | 39 | 47 | 57 | 60 |
| >200 people/hectare | 42 | 44 | 43 | 50 |
| >400 people/hectare | 15 | 20 | 14 | 19 |
| Informal | 63 | 67 | 52 | 60 |
| **Mwanza** (fewer rows than Dar es Salaam because of lack of digitised maps or relevant shape files) | | | | |
| Private rental accommodation | 48 | 38 | 33 | 44 |
| <5km from centre | 47 | 44 | 46 | 48 |
| <10km from centre | 79 | 75 | 91 | 92 |
| >200 people/hectare | 18 | 18 | 21 | 21 |
| >400 people/hectare | 3 | 3 | 2 | 2 |
| Informal | NA | NA | NA | NA |

### 2.3.5 *Gender*

Gender relations have important impacts on urban development (Chant and McIlwaine 2016), and when women or girls are seriously disadvantaged as a result, the consequences can be manifest in more onerous caring roles, reduced access to household income, lower levels of education, lower levels of paid work, gender-based violence, and the persistence of female health issues (including those related to maternal care and menstrual hygiene). Often gender differentials are hidden by household-based statistics, such as those constituting the household disadvantage index presented in Section 2.3.2. Also, gender discrimination does not generally take the form of spatial segregation. In both Dar es Salaam and Mwanza, about 90 per cent of both males and females in households live in 'family households', with half of the remainder living on their own (accounting for somewhat fewer women than men). In both cities, slightly over a third of females and only a fifth of males live in female-headed households. However, even these female-headed households are similar to the male-headed households, and are only slightly more likely to fall in the category of less advantaged.

One clear gender-related difference that is important when it comes to coping with land nexus pressures, and particularly those related to household infrastructure and services, is the caring and other unpaid work in the home

that women are disproportionately responsible for. Home maintenance is listed as the major economic activity for 26 per cent of women in both Dar es Salaam and Mwanza, as compared to around 5 per cent of men. This applies to women in all the classes, though a smaller share of women in the most advantaged classes have home maintenance as their main economic activity, perhaps because they have servants. Such figures, which force respondents to choose between home maintenance and paid work (as their principal occupation), hide the challenges many women have in combining home maintenance and other work. The pressure to work in the home probably helps to explain why slightly fewer women are listed as students, only two thirds as many women as men are listed as 'working for own benefit', and only about half as many are listed as 'working for pay'.

Though the statistics are not available to compare the dependence of men versus women on the conditions and locations of their homes, one would expect them to be more important for women. A lack of water, adequate sanitation, waste collection, or electricity make home maintenance more difficult, and these problems are all more prevalent in less advantaged classes. Conditions conducive to gender-based violence, such as poor street lighting and transport limitations that lead working women to have to negotiate unlit streets at night, could also create particular hazards for women. Violence is also a risk for men, although they are also the main instigators.

The 2012 census data indicate that although the mortality rates were roughly the same for men and women among the census households, the biggest single cause of female deaths (almost 10 per cent) was maternal death, while the biggest single cause of male deaths (around 6 per cent) was road accidents (which accounted for less than half that for females). As such, living somewhere with good access to maternal care would seem to be more important to reducing female deaths, while safe transport options would seem to be more important to reducing male deaths.

Given the importance of the house development process to women, with their home maintenance responsibilities and home-based health risks, one would expect local politics to be an important arena for women to be represented in. Generally, Tanzanian women's engagement in politics has been increasing in recent years (Strachan 2015), and according to a news piece[6] on the Inter-Parliamentary Union website, in 2017 women accounted for a third of the Members in Tanzania's National Assembly, making the ratio far more equal than most countries. Education, including knowledge of Kiswahili, has been found to increase women's participation in local governance. Also, women landowners have been found to possess greater power in their marriage, and it has been suggested that this also increases political participation. The default position when assigning land rights is still to put it in the name of the man, although there are no real gender-specific challenges in accessing microfinance credits (Kyessi and Msangi 2016).

6 www.ipu.org/news/news-in-brief/2017-09/working-with-tanzania-parliament-gender-equality

## 2.4 Key land nexus processes and the challenges and opportunities they pose for vulnerable groups

### 2.4.1 *An overview of key land nexus processes*

The rapid growth of cities in urbanising countries is rarely a smooth, efficient, or equitable process. Urban peripheries and their rural villages become part of a city in an uneven process of stops and starts, with no clear start or end points. Different groups of people and enterprises move in and out, structures and infrastructures are built up and torn down, and customs, institutions, and classes adapt or come into conflict with each other. Informal settlement, informal enterprise development, and informal service provision (including self-provisioning) play an important role in releasing short-term pressures in the land nexuses of both Dar es Salaam and Mwanza, but also bring problems. However, informality is not only difficult to define, but also only part of the story. Informality suggests a lack of adherence to official regulation, but informal activities and constructs often conform to local norms and are influenced by state actors and policies. Moreover, formal settlement, enterprises and service provisioning can be equally difficult for authorities and planners to control.

In this set of sections (2.4), we focus in on some of the key land nexus processes, drawing on a series of case studies undertaken in each city. Sections 2.4.2 and 2.4.3 concern informal peri-urban settlement, which accounts for most of the cities' spatial expansion. Section 2.4.2 examines informal development on the periphery in its broad outlines, identifying its salient features and some of the challenges it poses for urban planning. Section 2.4.3 follows with a more detailed look at the informal landowners leading this residential development, and how they incrementally provide themselves with housing and acquire services, but also supply a large part of the cities' rental market. Section 2.4.4 then turns to large-scale developments at the other end of the spectrum, examining examples of new towns and cities associated with different but equally difficult challenges.

Just as there are different types of settlement formation on the periphery, there are different means through which existing residents are displaced from the centre, often to make way for settlements catering to better-off residents or commercial areas. Section 2.4.5 examines incremental gentrification, a market-driven process of investment and displacement. Section 2.4.6 examines government-led resettlement, typically justified in public-interest terms, but also typically moving vulnerable groups from more central and connected areas to more peripheral and isolated locations. Such displacement can attract more attention, but is far less common.

Sections 2.4.7 and 2.4.8 examine two overlapping approaches for addressing a range of land nexus issues: land regularisation and improved service delivery (and water and sanitation provision in particular). Land regularisation is currently the favoured means of upgrading the physical conditions and ownership rights in informal settlements and creating settlements that can formally be recognised by all levels of government. Water and sanitation services are key to service upgrading, and eventually also to land regularisation. Government-led land regularisation and service upgrading efforts tend to proceed from more central/connected locations to more peripheral/isolated ones, but are important across the land nexus. Section 2.4.9 contrasts some of

the land nexus challenges in central and peripheral areas, and the role that better organised communities can play in helping to address them – recognising that organised communities are more likely to succeed if they can develop solutions that local authorities will support.

### 2.4.2 *Informal settlement formation on the periphery*

Section 2.4.2 draws on the case studies of Goba (Dar es Salaam) and Luchelele (Mwanza).

Informal land development processes and actors shape the urban form of Dar es Salaam and Mwanza cities. In the idealised planned city, roads are mapped out and sufficient land suitable for residential use is plotted well in advance of requirements (Angel 2015). Houses are constructed and serviced. People move in last of all. In the informal settlements of Dar es Salaam and Mwanza, this process is reversed. People start to move in when the infrastructure is rudimentary, then they move ahead with building their homes incrementally, providing themselves with (or paying for) decentralised services such as water from local boreholes and on-site latrines. When possible, they push to have road, electricity, and eventually water networks extended or improved. Through such incremental process, the populations of both Goba and Luchelele have been growing rapidly.

In both settlements, less well-off residents have been moving further out, and the original farming population has become a minority, with most having been displaced by wealthier people moving out from the centre. Goba was rural in the 1970s, with predominantly customary land tenure, and local ethnicities. In the 1980s, people from the city started to move in. During the 1990s newcomers were still buying the land from farmers, but land was shifting from customary to informal tenure, and from agricultural to residential uses. By the early 2000s informal real estate brokers were operating, and some better-off buyers were doing surveys and acquiring titles. Local *mtaa* and cluster leaders, and adjoining property owners, are now used as witnesses. In some cases, lawyers are involved in drafting agreements.

The lack of planning, and of concern for the external consequences of piecemeal development, both create problems. The settlements tend to locate in difficult-to-service places, and formal service providers (e.g. utilities) can ignore them until they are consolidating. Such settlements are costly to retrofit with serviceable roads and piped water, and the space for public facilities can be lost. The lack of services, infrastructure and public space can cause hardship and public health problems for the residents, and have external effects. Uncontrolled waste dumping and water abstraction, for example, contribute to public environmental risks beyond settlement boundaries (see Section 2.4.8).

On the other hand, this informal settlement has more advantages than is generally recognised. Customary tenure, with its very different logic, dominated not long ago, and even as this transitions to informality, the lack of a title does not in itself create tenure insecurity for plot owners. Rights of informal owners are recognised by adjoining land occupiers and by local leaders, who are increasingly involved as witnesses to property transactions and in authenticating sellers' ownership before property transactions. It is national policy that locally legitimised

landowners have rights similar to those with statutory claims. Informal property rights are acknowledged in the 2018 Draft National Human Settlement Development Policy, and the 2018 Draft National Housing Policy, which advocate more support for improving the informal systems (URT 2018a, 2018b).

Unfortunately, there is little recognition among planners or bureaucrats of the capacities of grass-roots actors in Goba or Luchelele. *Mtaa* and ward leaders already play a key role in guiding informal development. The skills of local leaders are often dismissed due to their lack of formal training, although formal training does little to prepare leaders for working with informal institutions or extreme poverty. The local actors have to work with little support, as well as little oversight. There are examples of corruption and unaccountable abuse of power, including cases where local leaders collude with land occupiers to sell land more than once, or to encroach upon land reserved for other purposes. This is probably the exception, however, and happens particularly in rapidly densifying built-up informal areas where norms and informal controls are breaking down. As land pressures grow, new approaches are needed, but it should not be assumed that local leaders should have a lesser role.

### 2.4.3 *Informal land development, self-built housing and informal rental markets on the periphery*

Section 2.4.3 draws on case studies of two more consolidated settlements – Kiembe Samaki (Dar es Salaam) and Kiloleli B (Mwanza) – and two at an earlier stage of consolidation – Mzinga (Dar es Salaam) and Nyasaka (Mwanza).

Informal land development, self-built housing and informal tenancy arrangements are all critical to housing supplies in Dar es Salaam and Mwanza. In 2012, 50 per cent of the people in Dar es Salaam living in owner-occupied homes, and 40 per cent in privately rented homes. In Mwanza, the statistics were similar: 58 per cent and 37 per cent. Moreover, a large share of the rental housing exists on plots first developed for owner occupancy, often taking form in rooms added alongside the original house within the same plot.

Despite the large differences in size, wealth, and geography between the two cities, there are striking similarities in the way informal development unfolds, judging from the case studies undertaken. Household shelter needs, and the drawbacks of being a tenant, are often the primary motivations for self-builders. Asset accumulation is a consideration, and for a small group it is the primary motivation. Previous research suggests self-builders have generally moved out from the centre of the city, where they have already established some income-earning opportunities, and they try to keep some of these (Andreasen, Agergaard and Møller-Jensen 2016). It is common for their households to have multiple income sources, and most development is financed from these.

The attraction of the periphery is that the land is cheap, so with a relatively small payment for a plot, and incremental investments in upgrading, they can end up as homeowners. The land and other costs for a small house can be the equivalent of ten years of rent, but unlike rent, when times get tough one can hold off on improvements. This is the only route most of these households have to get

their own house – and one that, with the shifting urban land nexus, could end up relatively well located and serviced in the foreseeable future. There are no affordable and formal alternatives.

The emergence of informal rental markets comes with consolidation. Brokers describe the areas becoming attractive to tenants about 10–15 years after the early years of settlement and land subdivision. Most landlords operate on a relatively small scale, accommodating one to six tenant families. A large landlord may accommodate up to 10–12 families. Many either live on the same compound or nearby. There are also some absentee landlords. Landlords expect to recover costs in five to ten years, though in this calculation they often omit the cost of the land and their own time.

The resulting rental housing is relatively low cost. As the neighbourhood or the property improves, higher rents may force tenants whose incomes are not improving commensurately to move out to cheaper neighbourhoods (if they are doing well the higher rents may entice them to get a plot of their own), with wealthier residents coming in to displace them. As such, it contributes to the market-led churn of the land nexus. However, this self-builder-led process is behind a large share of the affordable housing. The rental housing also allows settlements to densify without subdividing, and creates neighbourhoods that are both mixed use and mixed socially.

With this informal housing, the self-builders capture the increasing land values. The government is understandably concerned that this increased value cannot easily be diverted to cover the costs of the infrastructure that helps to drive it (though informal self-builders do often contribute to decentralised infrastructure – for example, boreholes, some with piped connections, and road improvements – and to connecting the networks – for example, contributing to pipe extensions or to electricity poles). In any case, in developer-led housing, it is often the developers that capture a large share of this increase, and this informal housing supports the rise of a class of owner-occupiers who can just make it onto the 'housing ladder', dampening the land conflicts that might otherwise arise as developers and others vie for land. Moreover, there are features of this informal system that may well be preventing large-scale land accumulation.

### 2.4.4 *Urban expansion and new towns/cities*

Section 2.4.4 draws on case studies of Kigamboni in Dar es Salaam and Buswelu in Mwanza.

In many ways, the creation of new towns and new cities is the opposite of the informal development taking place in most of Dar es Salaam and Mwanza. A new town/city is planned in far more detail than regulations demand; an informal settlement is unplanned. A new town/city is created all at once; an informal settlement is created plot by plot, wall by wall. A new town/city is based on a political settlement wherein the government tries to achieve planning success by making it lucrative for investors and politically attractive for elites; an informal settlement is based on a political settlement wherein the government and elites accept planning failure in return for not bearing the economic or political costs of forcing through formal alternatives.

Dar es Salaam, being the more global city, is the more obvious site for proposing new towns/cities. The city's skyline is changing rapidly, and as with many of Africa's more prosperous and networked cities (Watson 2013), various large developments have been proposed. Mwanza too is hoping to transform its land nexus with the help of international investment and tourism, as evident in its draft master plan (URT 2016a). New towns/cities are often linked to city boosting: creating the belief that the host city is on the way up and warrants further investment. There is an African parallel with past city boosting in other continents, with the belief that some cities in Africa will 'take off', but it not being clear which. City boosters often claim to be able to tip the balance – far more often than they actually do.

Kigamboni was a new city initiative that aspired to propel Dar es Salaam onto the stage of World Cities, but failed to materialise (Lindell, Norström and Byerley 2016). It had been planned for years. The logic of the site was that it was not yet, but could become, an excellent location. Its connectivity could be transformed with some strategic investments in transport infrastructure, including a bridge and sometime in the future a tunnel linking the peninsula of Kigamboni to the city. Considering its (future) proximity to the city centre, it was settled at relatively low density and had comparably low land prices. This made it an attractive prospect for a new city. But it was not enough. Despite all the planning and formal elite support, the plans have been put on hold indefinitely.

Unlike Kigamboni New City in Dar es Salaam, Buswelu New Town has been successfully initiated, as well as carefully designed. The government decided to set up a new municipality in Mwanza in 2012, with its headquarters in Buswelu Ward. A 'satellite town' was proposed to accommodate key municipal functions including administrative, commercial, and other services. In 2012, Buswelu was a low-density and largely agricultural ward towards the periphery of Mwanza. Today, various building structures, basic infrastructure, and services required by the inhabitants are in place and running, and it is probably one of the fastest-growing wards in the city. Indeed, one of the local concerns is the extremely rapid growth in informal settlement outside of the planned area.

Part of what distinguished the comparative failure of Kigamboni from the success of Buswelu was who participated in what, and how. In Kigamboni there were fewer and weaker mechanisms of engagement and mutual influencing between those involved in planning the new developments, those having a stake in the development because they lived in Kigamboni, and other aspiring stakeholders. There were comparatively poor relations between central government organs and *mtaa*/ward actors. Local stakeholders had serious concerns in Buswelu as well, including about compensation and resettlement, but they only turned into serious blockages in Kigamboni.

Land nexus dynamics, and how they were addressed, also help to explain the relative success of Buswelu. Developers are generally reluctant to be open about such large-scale plans, in part because the prospect of such a project attracts local and external speculators, increases land prices, and undermines the economics of the development. In the Kigamboni New City project, the stakes were higher, and those promoting the development failed to negotiate their conflicting goals of inflating the expectations of their own potential investors, while keeping

down the expectations of existing landowners and others hoping to profit from the project. In Buswelu – at least initially – more participatory and open planning processes took place without overinflating expectations, perhaps in part because of their manner and timing, but also because of the location. With the new transport connection, Kigamboni is likely to become wealthier and denser incrementally, but probably not as part of a large overarching new city plan.

### 2.4.5 *Incremental gentrification and rising land prices*

Section 2.4.5 draws on case studies of Manzese in Dar es Salaam and Mirongo in in Mwanza.

Gentrification refers here to a combination of rising (actual or potential) land prices, economic investment, and the displacement of economically vulnerable residents. The term was first coined to refer to a specific type of middle-class transformation of working class neighbourhoods in London (Glass 1964), but it has been extended to refer to a phenomenon that includes the market-led processes displacing residents of informal settlements (Lees, Shin and López Morales 2016). While forced displacement by state authorities and big developers gets the most attention, incremental displacement accounts for a far larger share of displacement in Dar es Salaam and Mwanza. Even incremental gentrification often takes place quickly. There is often a tipping point, backed up by strong feedback loops. Part of what drives gentrification are expectations about the future of a neighbourhood (and its external economies), and once gentrification starts those expectations rise.

The differences between gentrification in Manzese (in Dar es Salaam) and Mirongo (in Mwanza) reflect in part the different size and wealth of the cities, and that the more obvious current sites of gentrification are now in the informal near periphery of Dar es Salaam, but in Mwanza are in the more central planned areas. This being said, gentrification defined broadly is a continuum of processes, currently happening across both cities, including almost all of the case study sites.

In Mirongo, some residential areas have been densifying and others displaced by commercial uses, in a process led by affluent investors buying up properties in what was historically a planned area. Mirongo is part of the old centre of Mwanza, including some of the coastline, and stretches back along two of the city's main arterial roads. Statutory land tenure dominates. Multi-story buildings have become common. Services remain seriously deficient, however, and there are concerns about growing levels of theft, poor services, and a lack of cleanliness. Many low-income residents have been pushed out, but poverty is still evident in the growing numbers of street children. In effect, private plots in Mirongo have been gentrifying, but its public spaces have not been transformed commensurately. Such unbalanced gentrification would be expected to increase property prices more than rents (since property prices adjust to reflect future prospects, but rents do not). Not surprisingly, Mirongo is one of the city-centre wards that the Mwanza draft master plan identifies as suitable for redevelopment, as part of a high-class business and financial hub with mixed residential use (URT 2016a: xvi). If this is achieved, it will enable redevelopment, but also the continued displacement of disadvantaged groups, whose fate also requires public sector attention.

Manzese in Dar es Salaam was part of the more agricultural urban periphery only a few decades ago. The city has since overtaken it. It is now in the ring of dense informal settlement referred to in Section 2.2. But it also flanks one of the arterial roads (Morogoro Road), and has the recently constructed Bus Rapid Transit (BRT) running through it. As with Mirongo, the gentrification is not just a residential transition but also a shift towards commercial uses, which has been accompanied by a range of serious environmental problems.

The gentrification of Manzese raises issues around who does and who should guide the private redevelopment of informal settlements as prices rise. The informants in the case studies seemed to think investors make the key decisions. The *mtaa* leaders and ward officials, who are central to most informal development, are only peripherally involved, and more central authorities are also playing a limited role. Many of the more disadvantaged residents, including low-income tenants, have been pushed out. Owner-occupiers are in a more ambivalent position, with some happy to take advantage of the rising land prices to sell up and get a better home in a less commercial neighbourhood. For those remaining, improvements have been uneven, with some environmental conditions in continued decline.

### 2.4.6 *Urban resettlement*

Section 2.4.6 draws on case studies of resettlement from Magomeni Suna to Mabwepande (Dar es Salaam) and Mabatini-Mashineni to Nyamuongolo (Mwanza).

Resettlement and the churning of population across the urban land nexus is almost inevitable in a rapidly growing and developing city and cannot be left to land markets or spontaneously created local organisation (the common reference to 'land mafias' or the equivalent in many countries makes this clear). However, government-led displacement tends to be contentious and problematic. It is easy to say, as in the European Bank for Reconstruction and Development's report *Resettlement Guidance and Good Practice* (EBRD 2017: 3), that 'the goal of resettlement planning should be to minimise the negatives and maximise development opportunities', but this is hard to achieve. Even well-designed resettlement creates losers as well as winners, and must face difficult trade-offs that cannot be addressed with good practice guidelines. Poorly designed, under-resourced or unnecessary resettlement can create great hardship at the time. Moreover, they can undermine people's trust in government, while amplifying elite support for enforcing unaffordable regulations on those living in informal settlements, and accentuating the overall level of conflict in the urban land nexus.

As with market-led displacement, the net movement of resettlement tends to be from the centre towards the periphery. Some of the larger resettlements from informal settlements in Dar es Salaam and Mwanza City have been justified by the need for more commercial development (e.g. to expand Dar es Salaam's port facilities), environmental hazards threatening the residents (e.g. in flood-prone areas, such as Magomeni Suna in Dar es Salaam and Mabatini-Mashineni in Mwanza), and the negative consequences of informal settlement in inappropriate areas (e.g. in the rocky hills near central Mwanza). Such justifications can combine, complicating the politics of resettlement. Environmental disasters

can provoke resettlement from where land values and densities are rising, and officials and influential groups believe people should never have been allowed to settle in the first place.

The resettlement from Magomeni Suna to Mabwepande involved an attempt to move people affected by floods in central Dar es Salaam to a relatively poor and undeveloped area on the periphery of the city. The case study of resettlement from Mabatini-Mashineni to Nyamuongolo involved an attempt to move people from one of the oldest informal settlements, located in the rocky hills near the centre of Mwanza, where there had also been flooding. For those being resettled, challenges included coping with the disruption and potential loss of community relations and livelihood opportunities when they were forced to move from central to peripheral locations, and problems securing adequate, or in some cases any, compensation. In neither city were tenants considered for resettlement compensation. Many of the people being resettled faced multiple deprivations, which were amplified by the resettlement or displacement. It was no coincidence that the residents being moved were economically fragile: it was their economic circumstances that explain why they had not already moved away from the risks and conditions in their neighbourhoods.

The case of Magomeni Suna to Mabwepande was more acceptable for those resettled because these land/property owners were given a plot and some building materials to build a house. However, in neither case did the procedures follow those recommended as good practice, and the people who had been resettled had a range of complaints that can help inform future resettlement efforts. On the other hand, fully implementing all recommendations for good practice would be well beyond politically realistic budgets available to resettle populations who chose to move into areas that many officials and others believe should never have been settled. Moreover, the advantages of the new locations were also acknowledged by some of those resettled, including the relative security of tenure, and the lack of floods. It is important to learn from past mistakes and good practices in resettlement, and to give the residents a leading role in the resettlement process, while ensuring that state actors take their public responsibilities seriously.

It should be noted that tenants were not so much resettled as displaced: they were not eligible for plots in the receiving areas. As in several other cases, the fate of tenants is taken less seriously than that of owner-occupiers, even though tenants account for a large part of the population.

### 2.4.7 *Settlement regularisation and formalisation*

Section 2.4.7 draws on case studies of Magengeni (Dar es Salaam) and Ibungilo and Isamilo (Mwanza).

One approach to addressing the challenges of informal settlement in Dar es Salaam and Mwanza is settlement regularisation. There are formal steps towards regularisation set out by the Ministry of Lands, Housing and Human Settlements Development: (1) declaration and public consultation on the scheme; (2) surveying existing conditions; (3) developing and getting local approval for a land use plan; (4) undertaking a cadastral survey; and (5) issuing title deeds

and providing infrastructure (URT 2016b: 60). In Mwanza's draft master plan, regularisation schemes are treated as the alternative to town planning schemes, particular to informal settlements, and proposes turning them into formal settlements.

The experience in the case study areas demonstrate that regularisation can provide benefits that local residents, and especially landowners, do value. In practice, the costs for the full regularisation process are hard to cover locally, however, and little central funding is available. In Magangeni, for example, the surveying company was charging TZS250,000 per plot for surveying up to the stage of installing beacons, and over half the respondents felt that the cost should be lowered. Perhaps as a result of high upfront costs, progress in both Dar es Salaam and Mwanza has been patchy, and regularisation has only been partial in most areas where it has been attempted.

Low-cost regularisation relies heavily on active leadership of *mtaa* and ward officers, and in organising a sufficiently participatory and professional process. Where private firms are involved (e.g. in the surveying), negotiations with the firms are often held in local community meetings chaired by the *mtaa* leaders of the areas. Collective engagement is also necessary if regularisation is to become more than just an individualised process. Getting land for public purposes cannot easily be done in a piecemeal fashion. A number of settlements have had to deal with controversy in compensation arrangements, so these too need to be clear and agreed upon.

The current practice in the regularisation process in Magengeni in Dar es Salaam emphasises the protection of private property rights. This is a problem since it is difficult to secure access rights and necessary public spaces once titling of property rights is done. Moreover, some of the important potential benefits of regularisation are lost if the value of public space and infrastructure is not taken into account. One of the common failures of informal development (and unplanned private development generally) is that private land uses are overvalued relative to public land uses, as long as there are no effective institutions through which to represent public needs and demands.

In the cases of Isamilo and Ibungilo in Mwanza, property owners agreed to release land for public uses including access roads, open spaces and other services. Compensation for the land spaces reserved for public uses was paid by the local authority, which is unlikely to be replicable at scale. However, if the full benefits of regularisation are to be achieved inclusively, not only must the public as well as the private benefits be secured, but the regularisation will need to be achieved at scale. Otherwise, it needs to be kept in mind that subsidised but limited regularisation will lead to poorer tenants being evicted.

### 2.4.8 *Formal and informal water and sanitation provision*

Section 2.4.8 draws on case studies in Sinza and Mlalakuwa in Dar es Salaam and Mabatini and Kilimahewa in Mwanza, and related literature co-authored by partners in this project (e.g. Kjellén, Kombe and McGranahan 2018; McGranahan *et al.* 2016, 2018).

Far more than in rural areas, it is networked infrastructures that enable cities to function. Roads, electricity cables, water pipes, drains, and sewers are cheaper to extend around cities than to dispersed villages. And when they fail in cities, the consequences tend to be worse. Also, particularly in an urban land nexus, they all compete for space and urban planning is needed to ensure they are coordinated with each other and with the distribution of the structures and people they serve.

As described in earlier sections, the level of piped water provision in Mwanza is far higher, but also more unequal. Judging from the piped network maps, the difference is primarily due to where the main lines extend to, rather than connection rates of nearby households. The details of the political economy of the water utilities are beyond the scope of this study, but it is worth noting in this context that Dar es Salaam had a failed privatisation attempt in the early 2000s (Dill 2010; Pigeon 2012; Triche 2012) and the post-privatisation model is still under reorganisation.

Having a connection does not ensure an adequate water supply in either city, and particularly in Dar es Salaam there is evidence of many people relying on multiple (mostly inadequate) sources, often from different sorts of providers, particularly in unplanned/informal areas (McGranahan *et al.* 2018). Especially in Dar es Salaam, wells are widely used for drinking water, but in densely settled central areas there are risks of contamination and depletion, even with boreholes. In more peripheral areas, contamination is less severe, but there are indications that water abstraction exceeds renewals, which could cause a water resource crisis in the near future.

Turning to sanitation, sewers only reach a small minority of the population in both cities: the 2012 census estimates were that only 6 per cent of people in Dar es Salaam and Mwanza lived in households connected to the sewers, with levels three times higher than this in the most advantaged class of households (see Section 1 for how classes were constructed). As a result, most households depend on on-site facilities (mostly pit latrines) that are costly to maintain, and hazardous when they are not maintained (Jenkins, Cumming and Cairncross 2015). Like water, sanitation is of particular concern for women, and has long been a priority for the Tanzania Urban Poor Federation, made up and led predominantly by women (Banana *et al.* 2015). However, the nature of the sanitary challenge in an urban land nexus is such that low-cost sanitary improvements must be co-produced by communities and public actors, and organising and maintaining such improvements is difficult (McGranahan and Mitlin 2016). The challenge is all the more difficult because the public responsibilities for on-site sanitation are unclear: utilities are far better suited to working with piped systems than with on-site sanitation and community organisation, and even the ministerial responsibilities for sanitation have historically been divided between the ministries of health and water. Some of the ways in which the level of planning can make a difference were evident in the

comparison of sanitation challenges in Sinza (a planned area) and Mlalakuwa (an informal settlement), with sanitary improvements impeded, for example when private claims make it difficult to organise collective sanitation facilities (including sewer networks).

While the city land nexus dynamics generally undermine attempts to improve water and sanitation, there are important exceptions, particularly around sanitation. Public authorities and elites have a strong interest in sanitary improvement, particularly in centrally located informal settlements. This is amplified by the periodic warnings of possible cholera outbreaks in both Dar es Salaam and Mwanza. Residents of these settlements have a strong interest in gaining greater tenure security. There are times when both sets of interests overlap sufficiently to drive progress. The most likely opportunity lies in the hilly areas of Mwanza, where simplified sewers could be transformative, enabling what are now some of the most problematic and insecure informal settlements to gain acceptance and legitimacy. The case study areas of Mabatini and Kilimahewa have been part of a utility-led effort to provide such sewers. Partly because it is hard to extend roads or water to these hill settlements, better-off households tend to avoid them and instead, the residents are relatively poor people who also cannot afford good on-site sanitation. Downstream households are often adversely affected by the runoff from the latrines on the hills, contributing to the bad reputation these hilly areas have among many other residents and officials. The local utility has started experimenting with simplified sanitation, a technology that supported great strides in sanitary improvement in Karachi and a number of cities in Brazil. Cost is a potential obstacle, but it is possible that through continuing cost-cutting design improvements, more active community engagement, and innovative and equitable financing, these simplified sewers could become affordable at scale, transforming the prospects for these informal settlements.

### 2.4.9 *The land nexus and community action – from centre to periphery*

Section 2.4.9 draws on case studies of the central settlements of Mtambani (Dar es Salaam) and Kilimahewa B (Mwanza), and the peripheral settlements of Rufu (Dar es Salaam) and Ibinza (Mwanza).

As already indicated, in central and peripheral settlements of Dar es Salaam and Mwanza the dynamics of population growth, densification, and urban boundaries expansion show similar processes at work, but with significant differences. This section summarises the key land nexus issues in relation to access to and provision of housing and basic infrastructure, especially water and sanitation, and discusses the role of organised communities in addressing emerging and long-standing challenges.

#### The central locations – Mtambani in Dar es Salaam and Kilimahewa B in Mwanza

The main attraction of both settlements is their location within walking distance of places of work – mainly informal activities connected to industrial enterprises, and Kariakoo market in Dar es Salaam and the fish market in Mwanza – and to food markets and outlets. Both neighbourhoods have transformed rapidly from peripheral farming areas in the 1980s to densely populated inner-city settlements. Land and housing prices have increased accordingly, and land titling

and residential licensing are being rolled out even in Kilimahewa B, though – as noted above – Mwanza is generally far behind Dar es Salaam in this process.

In both Mtambani and Kilimahewa B, basic infrastructure has reached the settlement, but especially for water and sanitation, service provision has not kept up with the growing population. In Mtambani, despite multiple sources of water, shortages are frequent, resulting in steep increases in prices. The lack of space for digging new toilets and emptying new ones makes faecal sludge management a growing challenge. Kilimahewa B is best described as a settlement of two parts – one part on the plain close to the main road to the airport and occasionally subject to flooding, and a very steep and rocky part presenting clear challenges for access to water and sanitation, as well as construction since all materials must be carried on foot. In the latter, the local utility, MWAUWASA, has connected almost 200 households to a simplified sewerage system – which has proved successful, but has not been extended to the rest of the settlement.

Over time, access to housing has drastically changed in both Dar es Salaam and Mwanza settlements, with landlords building additional residences on their plots and many moving elsewhere and renting out their homes. Tenants account for three quarters of residents in Mtambani and about 60 per cent in Kilimahewa B – well above the city averages. External pressures are particularly strong in Mtambani, where a private company started purchasing land for industrial development; however, this is taking a long time and increases the sense of uncertainty among residents, especially tenants, as eviction remains a possibility and discourages investments in basic infrastructure. Such pressures are somewhat surprisingly absent in Kilimahewa B, despite its proximity to the recently expanded main road connecting Mwanza to the airport. Here too, however, it may be just a matter of time as plans are being prepared for the development of a second central business district not far from the settlement. It was clearly observed that central settlements are potentially subject to gentrification, with high amenities as well as high land prices and eventually rents. Some residents, and in particular owner-occupiers, may benefit, but this could also drive out the many residents now renting relatively affordable homes.

### The peripheral locations – Rufu (Dar es Salaam) and Ibinza (Mwanza)

Both Rufu and Ibinza are rapidly transforming from farmland to residential neighbourhoods and hence while density is increasing, it is still low compared to the central settlements. Farming is still practised by the original residents, although it is declining as land is being sold to newcomers from the inner city and other urban centres. In Rufu, original residents now comprise only 10 per cent of the population but in Ibinza, where the process of transformation started more recently, they comprise 80 per cent. Selling land to newcomers is profitable as the price of land increases, but it can also be a necessity for farmers who cannot afford to pay land taxes as land is being surveyed and titles issued. Investment by wealthier urban households in these peripheral areas has significant impacts: in Rufu, better educated new residents, including retired civil servants, can negotiate with the local government to improve basic infrastructure such as the road. This seems further behind in Ibinza, where several new houses remain unoccupied due to lack of services including water and a decent road.

While urban investment can bring in new economic opportunities, it is unclear whether these will benefit all residents. One challenge is the increased demand for basic services: Rufu hosts a large school with 1,600 students from the settlement and surrounding areas, but it only has two toilets serving them. Hence, while the growing number of tenants in Rufu reflects the success of the settlement, lack of planning is seen as a looming challenge. In Ibinza, lack of basic infrastructure is not slowing down investment in land and housing, but is a major challenge for local economic development as investors appear to hesitate to move into the settlement. However, due to its available land space, the municipality could use this as an opportunity to implement proper planning rather than waiting for the areas to densify and then do the slum upgrading.

### The role of organised communities in addressing challenges

As both Dar es Salaam and Mwanza expand, competition for land intensifies. This is particularly the case for the centrally located settlements, but also for the peripheral ones. In the absence of planning, there are real risks that increasingly privatised land markets exclude the urban poor, including tenants and poor farmers in the peripheral settlements. There is also a real risk that public use of land for infrastructure and amenities is overlooked, compounding existing and emerging problems in relation to water, sanitation, and roads.

In both settlements, the role of municipal planning was missing. Hence, organised communities can make a difference by developing community master plans for their neighbourhoods that address the rapid pace of densification and informalisation. These plans identify the needs for basic infrastructure and their location; they also identify the most vulnerable groups and advocate for equitable compensation and resettlement plans. Where decentralised simplified sewerage systems are built by public utilities, a key role for organised communities is engaging in maintenance to ensure their sustainability. However, the local government needs to look critically at the potential for working with organised communities in transforming these settlements.

# 3 Khartoum

## 3.1 An overview of the growth of the city, its governance, and its changing land nexus

Urbanisation trends in Khartoum began to escalate after the desertification phenomenon of the 1970s and 1980s. Civil wars in South Sudan (1953–72 and 1983–2005) (Hamid 1996) and the conflicts in Darfur (since 2003), Blue Nile, and South Kordofan (since 2011) have also provoked a huge wave of migration towards the capital, as internally displaced people (IDPs) in particular – with numbers reaching 2.5 million in 2000 according to Banaga (2001: 41) – looked for a safe haven in the city. Khartoum's growth rates reached a peak in 1983 at 11.8 per cent, and since then the city has continued to grow at a rapid pace that exceeds 4.0 per cent per annum (see Table 6). The Central Bureau of Statistics (CBS 2018) approximated that Khartoum State currently hosts 19 per cent of the total population of Sudan (41,984,512). The city also hosts many refugees from neighbouring countries (Ethiopia and Eritrea) and more recently from Syria,

**Table 6 Khartoum growth rates**

| | 1973 | Rate of growth | 1983 | Rate of growth | 1993 | Rate of growth | 2008 | Rate of growth | 2014* |
|---|---|---|---|---|---|---|---|---|---|
| **Khartoum** | 784,294 | 5.6% | 1,340,646 | 11.8% | 2,919,773 | 4.7% | 4,272,728 | 4.0% | 7,993,851 |

* Since Sudan has not had a census since 2008, Khartoum's population estimates are projections.

Source: Compiled from Osman (2012); CBS (2018); United Nations Population Division (2018).

Yemen, and South Sudan who are trying to find access to the urban land nexus. The Khartoum Strategic Council estimates there were 4.5 million foreigners in Sudan in 2016.

Up to independence (1956), land in Khartoum was classified into four categories: first class to house the British; second class for other Europeans; third class for Egyptian, Syrian, and Sudanese people who served the colonial government; and fourth class with annual lease for the rest of the citizens (Abu-Saleem 1971). With the exception of the fourth class, this colonial residential zoning system continued after independence, defining urban categories (first class for the high-income strata; second class to middle-income; third class to low-income; and fourth class for temporary residents) according to surface area of land parcels and construction materials.[7] In 1970 the government issued the Unregistered Land Act 1970, stipulating that any land not registered under a beneficiary's name at that time would be considered in government ownership. Consequently, 99 per cent of land in Sudan is considered governmental land,[8] and is given to residents in leasehold.

In the context of the current economic recession, and Sudan's loss of oil revenues after South Sudan's independence in July 2011, land – and urban land in particular – has become an ever more valuable asset not only for residents of all kinds of economic strata, but above all for local authorities that use land as a source of revenue (Steel, Abukashawa and Hussein 2019). Due to the devaluation of the Sudanese pound and a lack of trust in the formal banking system, land and real estate investments seem to be the most secure and lucrative deposits in times of economic inflation and political instability. At the same time, land seems to be an important asset in payments for loyalty and real estate a significant tool of politically secured wealth accumulation. In addition, the Sudanese tradition of investing in land and real estate has been further supported by the sites and services policies, in which the Ministry of Housing, Khartoum State allocates land at subsidised prices to low- and middle-income households on the basis of specified eligibility criteria, taking into account household income, family size, number of children and current housing situation (Hamid and Mohamed Elhassan 2014).

At the same time, the central business district has expanded into the surrounding residential areas due to the unexpected high rates of population growth and migration inflows on one side, and the real estate investments by various local and foreign entities on the other (KPP5 2010; Choplin and Franck 2010). Some

7 This system was abolished in 1990.

8 A structured conversation with Prof. Hag Adam Eltahir, Legal Consultant, former head of 'Land Corruption Court', on 28 August 2019.

**Table 7 Population distribution by locality within Khartoum State.**

| | Locality | Area (sq km) | Rate of growth (2013–18) | Population 2008 | Population 2013 | Population 2018 |
|---|---|---|---|---|---|---|
| 1 | Khartoum | 154 | 0.033 | 634,312 | 746,113 | 877,619 |
| 2 | Ombadda | 3,449 | 0.036 | 908,116 | 1,083,777 | 1,293,418 |
| 3 | Omdurman | 1,183 | 0.036 | 431,578 | 515,060 | 614,691 |
| 4 | Sharq Alneel | 9,810 | 0.034 | 860,475 | 1,017,047 | 1,202,108 |
| 5 | Karrari | 3,712 | 0.036 | 635,307 | 758,198 | 904,860 |
| 6 | Jabal Awlya | 566 | 0.035 | 758,550 | 900,919 | 1,070,010 |
| 7 | Bahri | 2,867 | 0.034 | 584,903 | 691,332 | 817,126 |
| | **Total** | **21,741** | **0.035** | **4,813,241** | **5,712,446** | **6,779,832** |

Source: CBS (2018).

dwelling units have been directly transformed into commercial offices, and some old and obsolete units have been demolished and transformed into high-rise buildings for commercial and financial use. While these construction sites in the city centre often provide labour and/or shelter to one of the most vulnerable populations in the urban land nexus, such as South Sudanese refugees living on the unfinished construction sites as guards (Grabska and Miller 2016), these kinds of city dynamics have also pushed away many migrants and low-income groups to more peripheral areas of the city, which are already growing due to the large influx of migrants, refugees, and IDPs, and resulting in the proliferation of all types of squatter settlements all over the city (UN Habitat 2009).

Even though in the 1990s the state authorities took strong measures to tackle informal urban expansion, informality continues to affect the urban morphology of Khartoum today by the persistence of some squatter settlements.

## 3.2 Patterns of settlement, segregation, and informality across the land nexus

### 3.2.1 *The distribution and density of population*

By mapping population density from 2008 to 2018, it can be seen that population distribution and density (per square kilometre) is evenly spread out across the units of the state and in line with the natural growth of population. However, Table 7 shows a slight increase in the growth rate of the western bank localities, areas that have been preferred by migrant and IDPs from the Darfur region (see also Section 3.4.2 on the Al-Fateh case). The southern administrative district of Jabal Awlya also showed some growth, hosting the largest squatter settlements in the localities of Mayo and Ingaz, and the relocation area of Elrashid (UN Habitat 2012). Other than that, there is no trend of significant change in population distribution (see Table 7).

In terms of density, Figure 14 shows a slight increase at the periphery of the city, particularly in the upgraded settlements sandwiched between the outer ring road RR5 and the old city centre of Omdurman. The general picture of change in

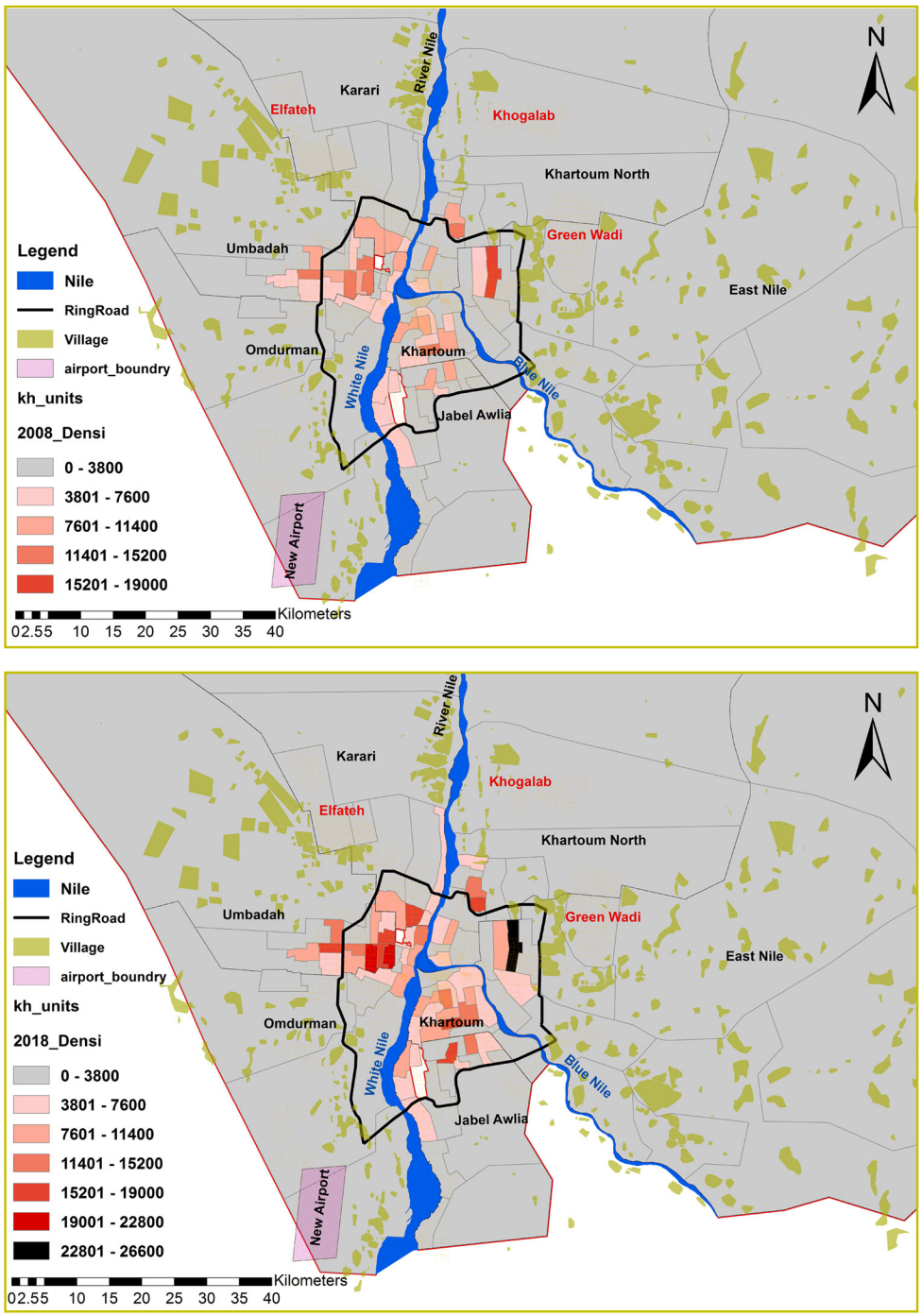



**Figure 14** Population density of Khartoum, 2008 (top) and 2018. Source: Data for maps taken from the Central Bureau of Statistics 2008 with official estimates for 2018, and the Ministry of Planning and Ministry of Infrastructure, Khartoum State. Maps generated and coordinated by the University of Khartoum.

density shows an increase on urban land at the periphery at the same average density of the vicinity (see Table 8). Khartoum is a city of low-density sprawl that has encroached upon the surrounding agricultural and unused drylands as it has grown outwards. Its pattern of growth is similar to that of Dar es Salaam; development has proceeded outwards along the city's main arterial radial streets emerging from the city's old colonial centres (see dynamic map series in Annexe D).

Subsequent development has taken place in the interstitial neighbourhoods between these main roads. This process has heightened the functional power of

the city centre whilst at the same time weakening its physical connectivity with continued expansion at the peripheries where newly formulated settlements – often through sites and services schemes – have been established (see Section 3.4.2 on the Al-Fateh case and Section 3.4.4 on the Khojalab case). At the same time, in these peripheries, rural villages that have been absorbed into the urban fabric (according to the Regularization and Planning of Villages decree, Yahya 2014) and newly established middle-class formal settlements (see Section 3.2.2) have put pressure on agricultural and white lands (land registered by the state but not yet developed). Densities in these different forms of settlement vary widely with the re-planned villages facing very high density, increasing density in resettlement areas and low or zero density in new formal settlements such as in cases of Soba West (see also Steel *et al*. 2019) and Khojalab.

**Table 8 Population density (per sq. km) over the state's administrative units**

| | Locality | Density 2008 | Density 2013 | Density 2018 |
|---|---|---|---|---|
| 1 | Khartoum | 4,119 | 4,845 | 5,699 |
| 2 | Ombadda | 263 | 314 | 373 |
| 3 | Omdurman | 365 | 435 | 520 |
| 4 | Sharq Alneel | 88 | 104 | 123 |
| 5 | Karrari | 171 | 204 | 244 |
| 6 | Jabal Awlya | 1,340 | 1,592 | 1,890 |
| 7 | Bahri | 204 | 241 | 285 |
| | **Density of total area*** | **221** | **263** | **312** |

* Calculated by the study team.

Source: Data from Central Bureau of Statistics 2008 census data and official estimates for 2013 and 2018.

### 3.2.2 *Spatial segregation and mobility*

The morphology of Khartoum is characterised by the existence of the physical barriers of the River Nile, formulated by the confluence of the White and the Blue Niles in the centre of the city. This means that the transport network is highly dependent on the ten bridges and transhipment nodes close to the riverbeds (see Section 3.4.5 on the Al-Shohada case study). The importance of these bridges to the street network of the city can be seen in the space syntax map of Khartoum where most are highlighted as part of key high movement potential corridors in the city (Figure 15, below). The disruption of any one of these adds significantly to travel times across the city. As also shown in Figure 15 (top), public transport routes seem to converge in the centre of the city with weak connections to the urban periphery. The Urban Transportation Strategy (UTS) suggested by KPP5 (2010) introduced the ring road concept to break the existing strong radial system, so that the transport system would be more efficient. The inner ring road (RR1) has been designed to serve the high demand in the central areas of the city. The outer ring road (RR5) is proposed to increase the efficiency of the whole transport system whilst limiting the outward sprawl of the city. That said, the weakness of the public transport system is not primarily related to and cannot be solved through improvement of the road system. There is a lack of

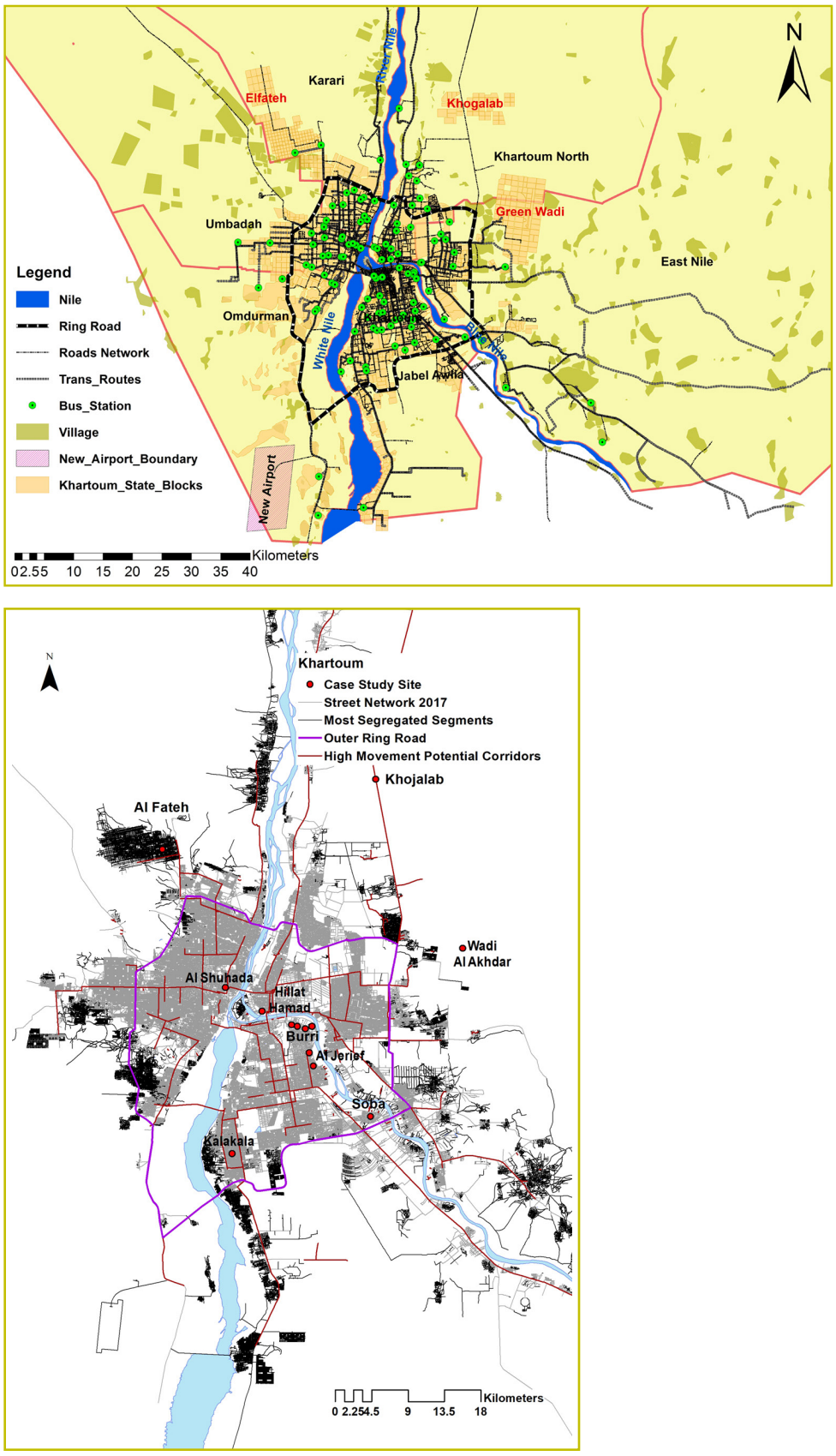



**Figure 15** Khartoum – accessibility and segregation alongside the city's public transport network. Source: Data for the transport map taken from the Ministry of Infrastructure, Khartoum State. Maps developed and coordinated by the University of Khartoum.

alternative transport modes for the buses and smaller road-based vehicles that are frequently hit by fuel crises.

In addition, several of the areas under study are located outside the envisioned ring roads – of which 65 per cent seems to be completed (Ministry of Infrastructure 2017) – which may potentially have an impact on the level of service provision to these areas in the future. The fact that less than a quarter of the public transport lines – primarily privately owned (*ibid*.) – service these urban peripheries, combined with the relatively high costs of these services, means that the connectivity between the centre and the periphery becomes (or remains) rather weak. Economic activity seems to be concentrated within the old city centres, with the city's primary markets, industrial areas, and administrative and institutional hubs located therein, thus limited connectivity to the peripheries potentially impacts access to livelihoods for communities resident in peripherally located settlements or at least adds considerably to the cost and time of their daily commute.

This poor connectivity does not necessarily translate in terms of land prices. The land value maps of 2003, 2008, 2013, and 2017 show that there is a continuous and significant increase in land value for all urban areas, following the 'tent shape' concept, wherein the increase – however slight – at the periphery will penetrate inwards towards the centre and vice versa. The analysis revealed that there is an internal mechanism in the land nexus that is pushing land values up when opening new urban frontiers of white lands. At the same time, land price increases are due to a number of other reasons such as the popping up of an economic hub (such as Kalakla Gatiya market), an expected opening up of previously closed old areas (the price explosion on Al-Tuti Island), new commercial centres (Al-Mogran), and slow gentrification (Al-Jereif West) among many others.

### 3.2.3 *Informal settlement, planning, and formalisation*

The land, planning, and building laws of Sudan prohibit the acquisition of land outside of the official system, and the use of or building on land acquired outside of the official system. Any possession out of these modes is considered illegal and might be subjected to demolition by the state authorities (Nagm Eldin 2007). However, the large influx of migrants, refugees, and IDPs has resulted in the proliferation of all types of squatter settlements (UN Habitat 2009). Since the mid-1980s, when the number of informal settlements reached 96 – populated by 687,000 inhabitants (Banaga 1994: 5; Hamid 1992) and forming about 40 per cent of the total population of Khartoum city (increasing to 60 per cent in 1989, the rise attributed to displacement caused by the war in Southern Sudan (Osman 1992)) – these squatter settlements covered 38.7 per cent of the total area of Khartoum city (see Figure 16). In the 1990s, the state authorities took strong measures to tackle informal urban expansion by shifting from control and demolition of squatter settlements to formal upgrading policies. The package composed of seven mechanisms that can be grouped into three main approaches:

- **Re-planning**, aiming to integrate the old villages and squatter areas within the urban fabric, after the necessary improvement in quality of the built environment (see case studies Al-Jereif West in Section 3.4.3 and Umbadda Abu Niran in Section 3.4.2).

- **Upgrading** the urban environment legally, physically, and in terms of provision of services for specific areas according to the categorisation. Settlements such as Ishash Fallata (see Table 9) and Daim benefited from this mechanism.

- **Resettlement** of IDP camps and squatter settlements to new sites and services areas in the three urban areas that make up Khartoum, i.e. Khartoum, Omdurman, and Bahri (Khartoum North); and the demolition of settlements built on state-owned lands or hazardous locations (e.g. on water drains or waste dumps).

Table 9 summarises the quantitative and qualitative achievements of these upgrading mechanisms after 1991. According to Khartoum Dynamic Map 1956–2017, the upgrading and re-planning supply mechanisms achieved a reduction in illegal informal settlement from 60 per cent to 17 per cent in 2017. The impact of these policies can be seen not only in the intensely planned and gridded structure of the city but also in the transformation of the bulk of 'squatter settlements' in 1990 to 'upgraded settlements' in 2000 (see Figure 16). Whilst the numbers suggest that this has addressed the issue of squatter settlements and informality, the most vulnerable populations remained or were even further pushed away from resource-rich parts of the urban land nexus, made marginal not just in spatial but also in socioeconomic terms. In addition, the shortcomings of the sites and services schemes in not only providing land titles but also in leading to affordable and appropriate housing continued to keep informal settlement, closer to the centre, an attractive and viable strategy for economically weak residents.

As a consequence, informality persists within the morphology of Khartoum despite efforts to eliminate or minimise it.

**Table 9 Achievements of the upgrading and re-planning supply mechanisms in Khartoum 2007 and 2017**

| | Mode | No. of households benefited |
|---|---|---|
| 1 | Upgrading of squatter settlements and old villages in six localities up to 2007 (Nagm Eldin 2007) | 160,903 |
| 2 | Old villages and neighbourhoods incorporated in the city fabric (115,000 for all the state) (Yahya 2014) | 38,000 |
| 3 | Upgrading Ishash Fallata fourth-class area, and relocation to Ingaz neighbourhood (Osman 2016) | 3,956 |
| 4 | Dar Al Salam concept – began by three settlements in three towns for 40,000 families, then generalised (Banaga 1996; UN Habitat 2009: 21) | 70,852 |
| | **Total beneficiary families** | **273,711** |
| | **Total number of beneficiaries (based on family size of 5.8 people per household)** | **1,587,523** |

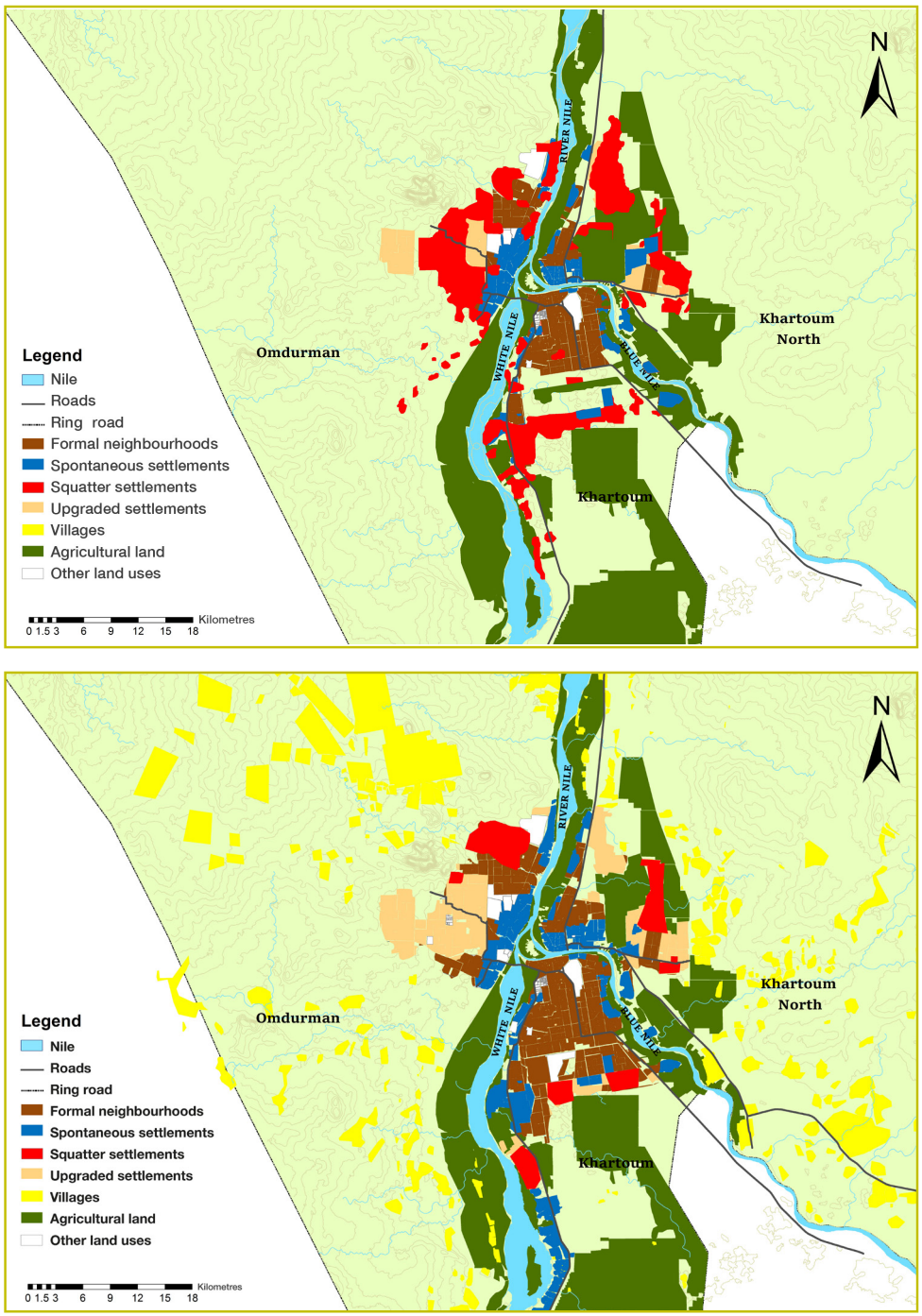



**Figure 16** Khartoum's land use transformation from 1990 to 2000 due to upgrading and resettlement policies. Source: Data for maps taken from the Ministry of Planning and Ministry of Infrastructure, Khartoum State. Maps generated and coordinated by the University of Khartoum.

### 3.2.4 *Drainage, water, and sanitation provision*

The average precipitation rate in Khartoum is between 25mm and 225mm per year. The East–West axis has two high shoulders stepped towards the Nile valley at the centre. The elevation ranges from 328 metres to 568 metres above sea level. A considerable number of collectors and natural drains penetrate the urban context down towards the Nile. Further upstream, these drains penetrate urban settlements and upgraded areas at the periphery of the city, inundating and isolating some areas from the city during the rainy season (see the Al-Fateh case study in Section 3.4.2). In addition to these areas, flooding also occurs in all

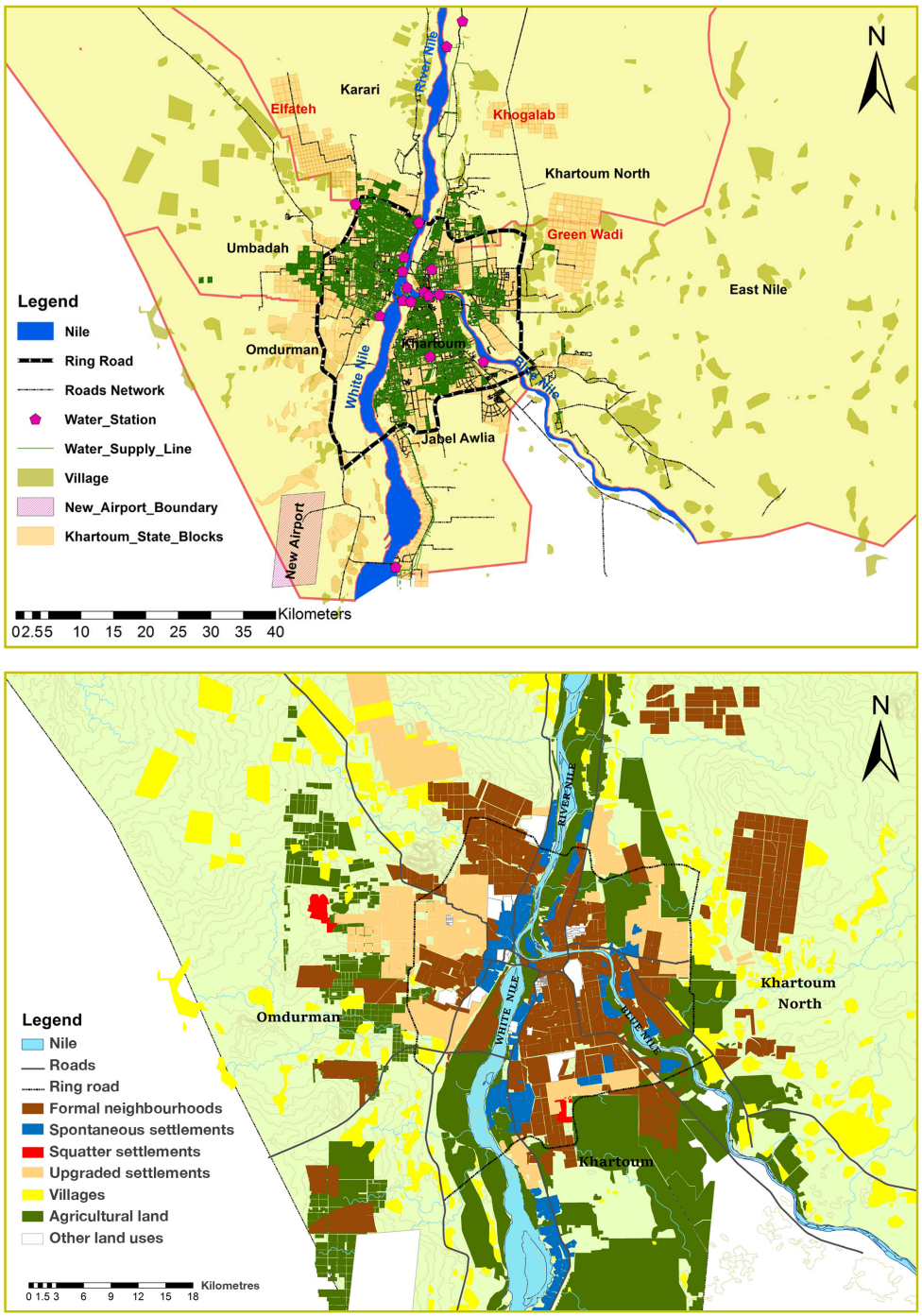



**Figure 17** Khartoum's water supply network provides limited service to upgraded areas and sites and services schemes at the periphery of the city and beyond. Data for maps taken from the Ministry of Planning and Ministry of Infrastructure, Khartoum State. Maps generated and coordinated by the University of Khartoum.

the old neighbourhoods and villages on the north–south banks of the river Nile (see the Soba West case study in Section 3.4.7). In some areas, the inefficiency of the drain system leads to the sanitary system overflowing and causing general environmental degradation.

The 2012 Monitoring Report of the Khartoum Structure Plan Monitoring Unit (2012: 91) calculated the deficiency in the produced potable water in Khartoum State at 50,525 cubic metres per day, which equals 4.2 per cent of the demand (assuming the standard consumption of 80 litres per person per day). Whilst

connection to the water network is not the primary problem (the potable water network covers about 70 per cent of the urban area), quality and supply are an issue. However, mapping of the water supply network shows that most of the deficiency is at the periphery of Khartoum in both upgraded settlements and sites and services schemes (see Figure 17). Some inner-city areas also suffer from quality and discontinuity of supply – especially during the dry season when the river and groundwater levels are at their lowest. The problem is exacerbated by the water stations being powered by fuel-driven pumps. During fuel crises, there can also be a shortage here, and the pumps are susceptible to failure during heat waves.

In contrast to the water network, the sewage system covers about 5 per cent of the urban context of Khartoum; primarily central and industrial areas in Khartoum and Khartoum North. However, sanitation problems are generally not registered as acute, especially not in Khartoum and Khartoum North, as the soil composition and the geological complexity allows individual solutions that are hygienic and affordable, such as pit latrines, septic tanks, and soakaway pits. Omdurman, on the other hand, has no sewerage system. Omdurman's geology and the rising water table does not support individual solutions and recent use of drilling machines to dig soakaway pits at low depths has led to contamination of underground water. The rocky surface makes even flushing water used for domestic purposes a problem. Sanitation in Omdurman is therefore not just a needed service, but also a menacing hygiene problem.

The fragmentation of the provision and management of services over different ministries, institutions, and localities at both the state and federal levels complicates access to services, particularly for the urban poor and newcomers to the city who, ordinarily, cannot navigate the complex processes and obligations.

### 3.2.5 *Overlapping spatial vulnerabilities*

From the above description, it becomes clear that although experiencing a relatively even spread of population density, Khartoum is facing horizontal expansion towards the periphery of the city. This periphery is diverse in terms of land transformations and settlement patterns, as it has been targeted by different policies. These range from the re-planning of villages to upgrading settlements and sites and services schemes for IDPs and squatters, as well as for middle-income groups who have acquired land through formal housing plans, or even high-income groups who purchased a villa in a 'gated community' (see also Klaufus *et al.* 2017). Regardless of socioeconomic status, inhabitants in these areas are highly disadvantaged compared to those living in more central parts of the city in terms of access to public services, although within the more central areas of the city low levels of public investment in road infrastructure, public spaces, and services also can be noticed. It was observed, however, that the more affluent inhabitants rely on private service provision (water tanks, electric generators, on-site sewage disposal), while the poorer segments of urban society and urban newcomers in particular struggle on a daily basis to access basic services and transport connectivity. The result is a vicious circle of informality and an increasing fragmentation of urban space and increasing socio-spatial discrepancies between those who have access to the urban land nexus and those who do not.

## 3.3 Vulnerable groups and how they are situated in the urban land nexus

### 3.3.1 *Introduction*

In Khartoum, vulnerable groups can be found all over the city. Apart from hosting an estimated 2.5 million IDPs (Banaga 2001), the city hosts many refugees from neighbouring countries such as Ethiopia and Eritrea, and more recently from Syria, Yemen, and South Sudan. Some of these latter groups used their residency in Khartoum as a transitional stage in their onward journey to western countries. The land regulation systems do not give refugees – and non-Sudanese in general – the right to own land except under special conditions, so they tend to live as tenants in the city. At the same time, many Sudanese migrants are living in the diaspora (the Secretariat of Sudanese Working Abroad estimated the total as five million in 2017)[9] and tend to invest their money in real estate in Khartoum in anticipation of returning to their home country at some point in the future (Kaag and Steel 2019). They left a vacuum in the urban land nexus that is often filled by temporary tenants or low-income groups who guard the land in anticipation of construction or who guard the temporary construction sites. In this section, we will further elaborate how these migrants, refugees, and other vulnerable groups are disadvantaged in the urban land nexus and the kind of consequences it has for their urban livelihoods.

### 3.3.2 *Identifying those living in conditions of poverty*

The income strata in Khartoum can be divided into four categories: (1) high-income strata (accounting for about 10 per cent of the city population); (2) medium-income strata (accounting for about 15 per cent of the city population); (3) the limited income groups (accounting for about 40 per cent of the city population); and (4) the low-income strata (accounting for about 35 per cent of the population) (Osman 2008: 5; UN Habitat 2009). Although the government subsidises all income groups, in practice medium- and low-income groups face difficulties in achieving housing through the sites and services partnership, which stipulates that the beneficiary has to pay 20 per cent of land cost and 20 per cent of basic services cost, but 100 per cent of the building cost. Combined with a vast housing deficit, high costs for construction, the point system in the sites and services scheme as well as the slow tempo of supply of land compared with the exacerbated demand, this has resulted in informal housing becoming a major mechanism for low-income groups to get access to the urban land nexus (i.e. 35 per cent of the urban population).

### 3.3.3 *Low-income immigrant tenants*

Some outer villages and neighbourhoods of Khartoum are not necessarily transformed by commercialisation of land transfer, gentrification and similar dynamics but rather by the influx of low-income immigrants. While the opportunistic presence of such immigrants is observable in many comparatively affluent but open areas (e.g. Al-Shohada), they established communal structures in others (e.g. Al-Jereif West) and became not just a stable part of its demographics but have also had a forming influence on their neighbourhoods. Al-Jereif West is known for its high concentration of Ethiopian

9 https://sswa-sd.com/

and Eritrean refugees – or immigrants, as many of them have been resident in Khartoum for several generations. Their general lack of legal status, even for long-term immigrants, puts clear limits to their integration in the urban land nexus. Most Ethiopians and Eritreans in Al-Jereif West work in the informal economy and share the rent of single rooms (with shared bathrooms and often without kitchens) with many other peers in mixed group tenant arrangements. The reliance on these types of informal tenancy arrangements makes them dependent on price developments, which recently required a reaction to 'slow gentrification' where rents increased faster than income (especially with devaluation of the Sudanese pound), as remittances (in dollars) are a central element of their livelihoods and these are constantly decreasing, even if income in Sudanese pounds is increasing.

The same is true for South Sudanese immigrants in Kalakla Gatiya. Although many of them owned land in Khartoum before the separation between South Sudan and Sudan, they have now returned from war-stricken home areas as foreigners – the men often working as construction workers or guards of houses left empty by those Sudanese who have migrated for labour in the Gulf countries, while the women do domestic work or engage in selling tea and petty trade, although widespread unemployment exists as well. Similar to Ethiopians and Eritreans in Al-Jereif West, the South Sudanese, as foreigners, do not have the right to own land and face difficulties with the unregulated increase of rents and lack of vocational training to allow them to cope and compete in the labour market.

### 3.3.4 *Resettled people (and especially those living in poverty)*

Within this research, we have focused on IDPs who have been resettled in the framework of the policies described above, in particular the Al-Fateh case in the north-west of Khartoum city. Al-Fateh was established in 2003 by the Khartoum state government following the relocation of residents of Al-Jikhays, which was considered a squatter settlement. With their transfer to a resettlement area, the new inhabitants received the right to own the land according to the Urban Planning and Land Disposal Law of 1994. However, there are important vulnerabilities for these IDPs, which come from infrastructural, economic, and environmental problems, and location issues. Infrastructural challenges in Al-Fateh include extended families living on small plots, low educational levels, and high rates of school dropouts and a lack of public services – particularly water, electricity, and people constructing individual pit latrines outside of their plots of land to avoid spoiling their land for further construction. Economic problems include the low standard of living and the lack of informal economic activities in the area where they live. And finally, environmental issues include proximity to landfill sites, housing in watercourses, and livestock being reared in residential areas. Inhabitants feel constrained in building a new livelihood in these areas due to the increased distance to the centre of the city (see also Section 3.4.2). A public transport line was established in 2006, and there are now three lines to the centre; however, the average cost of a commute to the central areas in the city is up to SDG40, making it unaffordable for the majority of Al-Fateh's inhabitants.

### 3.3.5 *Gender (including intersectionalities)*

Both the formal and upgrading mechanisms of land disposal stipulate registering the land under the combined names of husband and wife. The allocation criteria of the state's Housing Fund programmes gives more points to families with many children. However, widows, single persons, female-headed households, and families with no or few children due to biological or medical reasons, are treated separately in a channel named 'special cases plan' and are allocated a quota of plots and houses in those programmes. In Al-Wadi Al-Akhdar there is, for instance, 'the city of widows', a plot of land allocated for widows and orphans. The plots were allocated and houses constructed by the Housing Fund, but as service provision still had to follow – especially electricity connection – in 2018, only few of the houses were yet inhabited. In the Al-Fateh case study, it became clear that the consequences of resettlement were gendered. There was a lack of labour opportunities in the surrounding areas – only 18 per cent of our surveyed population could find work within the area, and another 18 per cent could only find work in Omdurman city. As a result, families were suffering from high commuting costs and the consequences of men working in the centre and only coming home late at night or during weekends. In the survey it became clear that this often resulted in an extra burden for women and children. Many women work as domestic workers or as tea sellers, but due to a lack of these kinds of informal labour opportunities, they decided to either no longer work outside the home or spent several hours on public transport, leaving their children behind with the day-to-day household chores.

## 3.4 Key land nexus processes, and the challenges and opportunities they pose for vulnerable groups

### 3.4.1 *An overview of key land nexus processes*

High rates of urbanisation, density, and population diversity in combination with the paradigm shifts of governmental approaches towards informality have significantly changed the urban land nexus of Khartoum throughout the twentieth century. This includes changes concerning the function and value of land and the consequent revenues extracted from the changes. As such, studying the land nexus and inclusive urbanisation in Khartoum State necessitates examining the various old and current mechanisms for land and housing allocation, since it deeply affects the morphology and the urban context of Khartoum. The upgrading, re-planning, and resettlement schemes, combined with formal housing supply mechanisms such as the government's sites and services schemes and the popular housing provision by the Khartoum State Housing Fund, will be further elaborated and reflected upon in the six particular land nexus issues described below.

### 3.4.2 *Upgrading settlements and resettling residents*

Section 3.4.2 draws on the case studies of Al-Fateh and Umbadda Abu Niran.

Local governments in Khartoum relied mainly on the mode of sites and services and upgrading mechanism to meet the growing demand of housing under the pressing urbanisation processes. However, although effective to resettle

low-income communities as practised in the Al-Fateh case or in offering a package of tenure legalisation, regularisation of the settlement, and the provision of basic services (water, electricity, protection from floods) in the Umbadda Abu Niran case, both policies contributed to Khartoum's current sprawl, urban pattern, and leapfrog urban development. The study of Al-Fateh also showed that resettlement policies do not necessarily address the challenges of urban poverty, that it can foster new forms of exclusion and marginalisation, spatially, economically, and environmentally. Resettlement and upgrading policies might even have contributed to the recreation of informality as there were some attempts of newly arrived migrants to settle in areas close to re-planning and resettlement sites, such as Angola, Mayo, and parts of Umbadda Abu Niran, in expectation of recompensation with land titles.

In addition, many people could not complete the registration of their plots and the implementation of resettlement and upgrading policies could be a rather tense experience. The survey in the case of Umbadda Abu Niran pointed to problems such as people not having the right identity papers to prove that they are Sudanese, or they lacked the money to pay the US$5 registration fee. Also, the first residents suffered from lack of water, transport, and food. Some brokers registered several times in different names in different plans, and cases of violence between migrants and officials occurred as a result.

### 3.4.3 *Migrant communities evolving*

Section 3.4.3 draws on the case studies of Al-Jereif West and Kalakla Gatiya.

UNHCR stipulates that 'refugees should receive at least the same rights and basic help as any other foreigner who is a legal resident, including freedom of thought, of movement, and freedom from torture and degradation treatment' (2009: 25). According to this decree, migrants and refugees are treated equally to the Sudanese in health and education services. However, it emerged from the Kalakla Gatiya and Al-Jereif West case studies that even for second-generation Ethiopians and Eritreans, or South Sudanese who lived in the city before the separation, it is hard to achieve a stable status in Khartoum.

Living as a tenant in Khartoum brings about a sequence of vulnerabilities, especially for foreign migrants who seem to be extra disadvantaged. Because rights and obligations are not clearly defined, and tenants in these areas are hardly aware of their rights according to the rent law of 1991, they are vulnerable for rent increases and other price developments. Rent price development seems very much responsive to macroeconomic developments, and the crisis of the last few years, together with an increasing commodification of land as speculation or as capital reserve, has also initiated a price spiral in the renting market.

### 3.4.4 *Opening up new serviced plots on the periphery*

Section 3.4.4 draws on the case studies of Khojalab, Soba West and Manshya East.

Although sites and services became the most important housing supply mechanism in Khartoum (Hamid and Mohamed Elhassan 2014), about 64 per cent of the plots allocated through sites and services schemes have not yet been developed (Osman 2010). Due to the inflated costs of services, the government failed to fulfil its share in financing services in the housing production partnership of sites and services, and also failed to pay back the share for services that beneficiaries payed in advance, when first allotted the land. In the case of Khojalab, the lack of service provision – and more precisely, the problem of access to water – resulted in not many houses having been built so far, although some 60,000 residential plots have been allotted since 2004 according to the sites and services scheme.[10] The government tried to minimise the gap of financing services by selling land by auction to cover the cost of urban services, and in more recent years, policy turned to seek partnerships with developers to provide the basic services, although without subsidy on land or in services (such as the case of Manshya East). However, it can be observed that both kinds of mechanisms still result in unserviced locations where the land has remained vacant for many years, with a little progress in the developer mechanisms. The result is leapfrog development and a vast and unlimited horizontal urban expansion with low overall density.

### 3.4.5 *Urban decay and physical transition*

Section 3.4.5 draws on the case study in the old neighbourhoods Hillat Hamad and Al-Shohada.

Continuous transformation of land use from residential to commercial has seriously affected living standards in old neighbourhoods near the city centre and contributed to a kind of contradictory land nexus transition in which well-off families are moving out because of negative side effects of commercialisation and a market-dominated area. This became explicitly clear in the case study of Al-Shohada, an old neighbourhood in Omdurman city that is slowly transforming into an open, commercialised area and a transport hub. This physical transformation goes hand in hand with urban decay and extra pressure on the available services. Omdurman market extends into Al-Shohada, and there is an increase in the number of shops for various purposes (food, electronics, stationery and office services, clothing, etc.) as well as health service facilities (private hospitals and clinics, medical labs). The presence of a main bus station increases the congestion and transit population, while attracting additional street vendors and restaurants. Consequently, many original owners have left the neighbourhood, making way for single men living in temporary tenant arrangements as well as for market vendors and homeless people. Residents leaving these areas clone new areas by opening new frontiers to reproduce similar neighbourhoods of similar social structures, especially when the market functions encroached into the inner neighbourhoods, or when their economic status improves. These new spontaneous neighbourhoods are located out of

10 Interview, 5 November 2018.

the city, characteristic features being large plot areas, low density, availability of services, owner-occupiers, and sometimes include multi-story buildings and villas. Some other inner-city neighbourhoods withstand market encroachment, transformation, and gentrification by strengthening their socio-spatial linkages with the area, such as in the case of Hillat Hamad in Khartoum North. The Sheikh Hamad mosque, Qur'an school, and cemetery area help the area to keep its social integrity, but not the physical, since several buildings were replaced by multi-story structures and apartment buildings. It is interesting to observe that all types of commercialisation and employment of land nexuses are taking place in the area, but only those that do not affect or change the ownership of land.

### 3.4.6 *Gentrification and redevelopment in the centre of Khartoum*

Section 3.4.6 draws on the case study of a centrally located neighbourhood, Burri.

The pressure of capital, especially generated by the Central Business District (CBD) functions, affected several areas in Khartoum and pushed many residents out of the area through processes of gentrification. The Burri case points to the importance of 'character' differences between different parts of the neighbourhood. Garden City, for instance, is characterised by qualitative transformations, wherein high-order urban functions such as embassies, company headquarters, and luxurious residences dominate the urban landscape. Previously, the area was owned by local agricultural landlords, who transformed it into an urban area, and they tended to either buy in the same area or just subdivide land to accommodate the new functions. In contrast, the neighbourhood further east, Burri Al-Sharif, is marked by imitative practices preventing physical transformation and land sales, as spatial closeness to the original mosque and house of the sheikh remained of value. A clear trend of gentrification occurs in Burri Al-Lamab (block 6) as owners sold their land and one-story low-profile houses for very high prices and bought complete multi-story buildings on the eastern riverbank, facilitated by the construction of Manshiya Bridge. In this sense, bridges have a significant role in gentrification, and urban and physical transformation – more so than roads – simply because they link together two prime locations of wide variety in land value.

### 3.4.7 *Urban transition in the periphery of the city*

Section 3.4.7 draws on the case study of peri-urban settlements, Soba West and Manshya East.

The escalating trends of urbanisation and the permanent population growth since the 1970s have resulted in a significant demand for land. The nearest urban land reserves in Khartoum to meet this demand are the immense white lands at the periphery of the city and the agricultural lands at the river fronts and in the peri-urban areas. One of the conceptual problems noted in the planning practice in Khartoum is that agriculture is not considered an independent urban function, but is perceived as land stock that could be transformed to urban land use whenever it is needed. As clearly shown by the case study of Soba West and Manshya East, the planning practice in Sudan should quantify and optimise the land take in a way that food security in the city (agricultural land) and

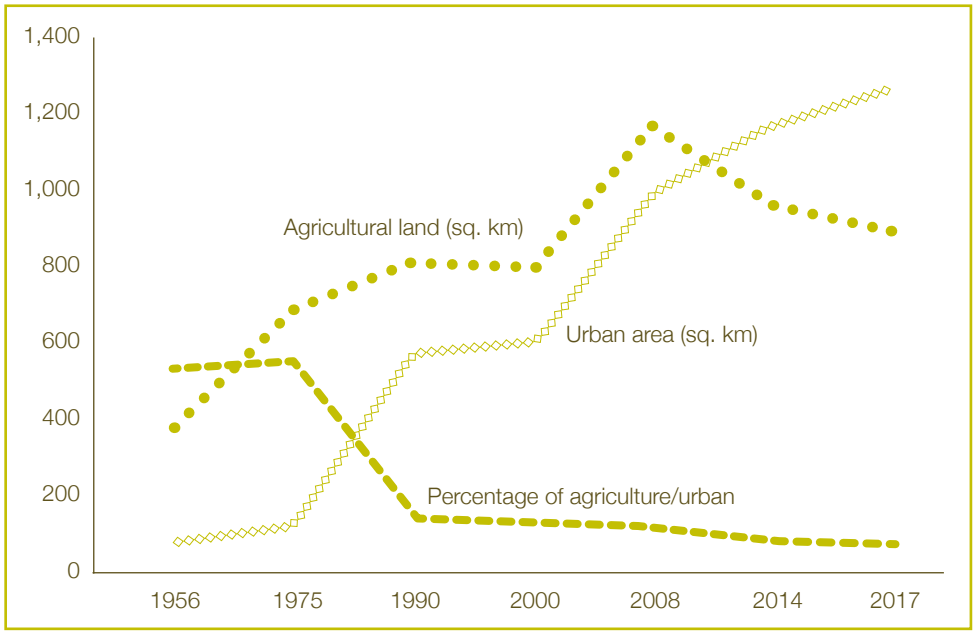



**Figure 18** Agricultural land in Khartoum 1956–2017 (in sq. km). Source: Khartoum Dynamic Maps (1956–2017); see Annexe D.

the demand for housing and urban facilities break even. Figure 18 shows that agricultural land is now adequate, even with the prevailing land take, but policies have to be critical about the consistent shrinking agricultural area because the expansion of the city, combined with a wide range of planning and restructuring strategies, have turned peri-urban Khartoum into a very heterogeneous and multi-functional space in which different types of land use are combined.

Due to its close connection to the city, the agricultural lands in the periphery attract ever more newcomers who are trying to find a relatively cheap place to live and to connect to the city for employment opportunities,[11] although land prices in this area have become increasingly expensive and speculative trends seem to be upward. As a consequence, the population in the peripheral areas of the city has become more diverse, ranging from high-income families with huge plots of land to many low-income families and day labourers who rent rooms in the area but are subject to further exclusion from the urban land nexus, even from their remote locations.

11 Interview with resident, November 2018.

# References


Abu-Saleem, M.I. (1971) *History of Khartoum*, Beirut: Dar El-Jeel (Arabic)

Alkire, S. and Santos, M.E. (2010) *Acute Multidimensional Poverty: A New Index for Developing Countries*, OPHI Working Paper 38, Oxford, UK: Oxford Department of International Development

Andreasen, M.H.; Agergaard, J. and Møller-Jensen, L. (2016) 'Suburbanisation, Homeownership Aspirations and Urban Housing: Exploring Urban Expansion in Dar es Salaam', *Urban Studies* 54.10: 2342–2359, doi:10.1177/0042098016643303

Angel, S. (2015) *The NYU Urban Expansion Program: A Primer,* New York NY: New York University, Stern School of Business

Banaga, S.I. (2001) *IDPs and Peace Challenges. With Emphasis on Khartoum State Experience*, Khartoum: International Africa University Press

Banaga, S.I. (1996) *MAWA: Unauthorized and Squatter Settlements in Khartoum*, Zurich: Habitat Group, School of Architecture, ETH Zurich

Banaga, S.I. (1994) *Unauthorized and Squatter Settlements in Khartoum: History, Magnitude and Treatment*, Khartoum: Ministry of Engineering Affairs

Banana, E. *et al.* (2015) 'Sharing Reflections on Inclusive Sanitation', *Environment and Urbanization* 27.1: 19–34, doi:10.1177/0956247815569702

Brennan, J.R. (2012) *Taifa: Making Nation and Race in Urban Tanzania,* Athens: Ohio University Press

Brueckner, J. and Lall, S. (2015) 'Cities in Developing Countries: Fueled by Rural–Urban Migration, Lacking in Tenure Security, and Short of Affordable Housing', in G. Duranton, J.V. Henderson and W. Strange (eds), *Handbook of Regional and Urban Economics* Vol. 5, Oxford, UK: Elsevier

Callaci, E. (2017) *Street Archives and City Life: Popular Intellectuals in Postcolonial Tanzania*, Durham, UK: Duke University Press

CBS (2018) *Census Report and Projections 2018*, Sudan: Central Bureau of Statistics

Chant, S.H. and McIlwaine, C. (2016) *Cities, Slums and Gender in the Global South: Towards a Feminised Urban Future*, New York NY: Routledge

Choplin, A. and Franck, A. (2010) 'A Glimpse of Dubai in Khartoum and Nouakchott. Prestige Urban Projects on the Margins of the Arab World', *Built Environment* 36: 64–77

Collier, P. and Jones, P. (2017) 'Transforming Dar es Salaam into a City that Works', in C.S. Adam, P. Collier and B. Ndulu (eds), *Tanzania: The Path to Prosperity*, Oxford, UK: Oxford Scholarship Online

Dill, B. (2010) 'Public–Public Partnerships in Urban Water Provision: The Case of Dar es Salaam', *Journal of International Development* 22.5: 611–624, doi:10.1002/jid.1601

EBRD (2017) *Resettlement Guidance and Good Practice*, London, UK: European Bank for Reconstruction and Development

Glass, R. (1964) 'Introduction', in R. Glass (ed.), *London: Aspects of Change*, London, UK: Macgibbon & Kee

Grabska, K. and Miller P. (2016) 'The South Sudan House in Amarat: South Sudanese Enclaves in Khartoum', *Egypte Monde Arabe CEDEJ* 14: 23–46

Hamid, G.M. (1996) *Population Displacement in the Sudan: Patterns, Responses, Coping Strategies*, New York: Center for Migration Studies

Hamid, G.M. (1992) 'Livelihood Patterns of Displaced Households in Greater Khartoum', *Disasters* 16.3: 230–239

Hamid, G.M. and Mohamed Elhassan, A. (2014) 'Incremental Housing as an Alternative Housing Policy: Evidence from Greater Khartoum, Sudan', *International Journal of Housing Policy* 14.2: 181–195

Hillier, B. (1996 [2007 electronic edition]) *Space is the Machine: A Configurational Theory of Architecture,* London, UK: Space Syntax

Jenkins, M.W.; Cumming, O. and Cairncross, S. (2015) 'Pit Latrine Emptying Behavior and Demand for Sanitation Services in Dar es Salaam, Tanzania', *International Journal of Environmental Research and Public Health* 12.3: 2588–2611, doi:10.3390/ijerph120302588

Kaag, M. and Steel, G. (2019) 'Transnational Migrants, Land and New Investment Hubs in African Cities', *Built Environment* 44.4: 477-492

Khartoum Structure Plan Monitoring Unit (2012) *The Annual Monitoring Report 2012*, Khartoum: Khartoum State Government

Kironde, J.M.L. (2007) Race, Class and Housing in Dar es Salaam: The Colonial Impact on Land Use Structure, 1891–1961', in J.R. Brennan, A. Burton and Y.Q. Lawi (eds), *Dar es Salaam: Histories from an Emerging African Metropolis*, Dar es Salaam and Nairobi: Mkuki na Nyota Publishers and the British Institute in Eastern Africa

Kironde, J.M.L. (2006) 'The Regulatory Framework, Unplanned Development and Urban Poverty: Findings from Dar es Salaam, Tanzania', *Land Use Policy* 23.4: 460–472, doi:10.1016/j.landusepol.2005.07.004

Kjellén, M.; Kombe, W. and McGranahan, G. (2018) 'Addressing Water Challenges and Urban Informality: Lessons from Dar es Salaam, Tanzania', *RIO+ Perspectives Integrated Policy Briefs* 1.1: 6–10

Klaufus, C.; van Lindert, P.; van Noorloos, F. and Steel, G. (2017) 'All Inclusiveness Versus Exclusion: Urban Project Development in Latin America and Africa', *Sustainability* 9.11: 2038, doi:10.3390/su9112038

Kombe, W. (2017) 'Institutional Reforms for Urban Land Use Planning and Management in Sub-Saharan Africa: Evidences, Gaps and Prospects', professorial inaugural lecture by Professor Wilbard Kombe at Ardhi University, Dar es Salaam

Kombe, W. and Kreibich, V. (2000) 'Reconciling Informal and Formal Land Management: An Agenda for Improving Tenure Security and Urban Governance in Poor Countries', *Habitat International* 24.2: 231–240, doi:10.1016/S0197-3975(99)00041-7

KPP5 (2010) *The Khartoum Structure Plan 2010–2031*, Khartoum: Mefit and Elamin Consultancies, Ministry of Planning

Kyessi, A.G. and Msangi, D. (2016) 'Gender Equity in Accessing Housing Microfinance in Urban Areas in Tanzania: A Case of Dar es Salaam', *African Resources Development Journal* 2.2: 229–253

Kyessi, A.G. and Tumpale, S. (2014) 'Formalizing Property Rights in Informal Settlements and its Implications on Poverty Reduction: The Case of Dar es Salaam, Tanzania', *Journal of Business and Economics* 5.12: 2353–2371

Lees, L.; Shin, H.B. and López Morales, E. (2016) *Planetary Gentrification*, Cambridge, UK and Malden MA: Polity Press

Lindell, I.; Norström, J. and Byerley, A. (2016) *New City Visions and the Politics of Redevelopment in Dar es Salaam*, Uppsala: Nordiska Afrikainstitutet

McGranahan, G. and Mitlin, D. (2016) 'Learning from Sustained Success: How Community-Driven Initiatives to Improve Urban Sanitation Can Meet the Challenges', *World Development* 87: 301–317

McGranahan, G. *et al.* (2018) 'How International Water and Sanitation Monitoring Fails Deprived Urban Dwellers', in O. Cumming and T. Slaymaker (eds), *Equality in Water and Sanitation Services*, London, UK: Routledge

McGranahan, G. *et al.* (2016) *Universalising Water and Sanitation Coverage in Urban Areas: From Global Targets to Local Realities in Dar es Salaam, and Back*, IIED Working Paper, London, UK: International Institute for Environment and Development

Ministry of Infrastructure (2017) *The Annual Strategic Report 2017*, Khartoum: Ministry of Infrastructure

Moshi, I.; Msuya, I.R. and Todd, G. (2018) *Tanzania: National Urban Policies and City Profiles for Dar es Salaam and Ifakara*, SHLC Research Report, Glasgow, UK: Centre for Sustainable, Healthy and Learning Cities and Neighbourhoods

Nagm Eldin, H. (2007) *The Villages Re-Organization Affairs Report 2007*, Annual Progress Report to the Minister, Khartoum State: Land Department, Ministry of Planning

NEMC (2013) *Environmental and Social Impacts Assessment for Proposed Construction of Simplified Community Sewerage System for Mabatini and Igogo Areas in Mwanza City*, Dar es Salaam: National Environment Management Council

Osman, A.M. (2010) 'Housing and Real Estate Development Experiences in Sudan. Khartoum State as an Example', paper presented at the 52nd Forum of the Council of Ministers Secretariat, Khartoum, Sudan, March

Osman, S.M. (2012) 'Sudanese Cities' Integrated Development Indicator SCIDI', paper presented at the 1st International Conference on Local Governance and Sustainable Urban Development in Arab City, sponsored by Arab League, UN Habitat and Kuwait Municipality, Kuwait, 7–9 May

Osman, S.M. (2008) 'Housing Strategy in Sudan. The Unachieved Balance of Supply and Demand', paper presented to the 3rd Architectural Scientific Conference on Urban Housing, Sharqa Hall, Khartoum, 28–30 April

Osman S.M. (1992) 'Evaluation of Site and Services Approach in G. Khartoum. Ramification on Land Market and Housing Production', PhD thesis, Middle East Technical University

Pigeon, M. (2012) 'From Fiasco to DAWASCO: Remunicipalising Water System in Dar es Salaam, Tanzania', in M. Pigeon, D.A. McDonald, O. Hoedeman and S. Kishimoto (eds), *Re-municipalisation: Putting Water Back into Public Hands*, Amsterdam: Transnational Institute

Scott, A.J. and Storper, M. (2015) 'The Nature of Cities: The Scope and Limits of Urban Theory', *International Journal of Urban and Regional Research* 39.1: 1–15, doi:10.1111/1468-2427.12134

Steel, G.; Abukashawa, S. and Hussein, M.O. (2019) 'Urban Transformations and Land Governance in Peri-Urban Khartoum: The Case of Soba', *Journal of Economic and Social Geography*, doi:10.1111/tesg.12372

Strachan, A.L. (2015) *Women in Politics and the Public Sector in Tanzania*, GSDRC Helpdesk Research Report 1286, Birmingham, UK: GSDRC, University of Birmingham

Stren, R.E. (1975) *Urban Inequality and Housing Policy in Tanzania: The Problem of Squatting*, Berkeley CA: Institute of International Studies of the University of California, Berkeley

Triche, T. (2012) *A Case Study of Public–Private and Public–Public Partnerships in Water Supply and Sewerage Services in Dar es Salaam*, Water Papers, Water Partnership Program, Washington DC: World Bank

UN Habitat (2012) *The State of Arab Cities 2012. Challenge of Urban Transition*, Nairobi: UN Habitat

UN Habitat (2009) *Urban Sector Studies and Capacity Building for Khartoum State*, Nairobi: UN Habitat

UNHCR (2009) *Protecting Refugees and the Role of UNHCR 2008–2009*, Geneva: UNHCR

United Nations Population Division (2018) *World Urbanization Prospects: The 2018 Revision*, New York NY: United Nations Department of Economic and Social Affairs

URT (2018a) *Draft National Housing Policy*, Dar es Salaam: Government Printer, United Republic of Tanzania

URT (2018b) *Draft National Human Settlement Development Policy*, Dar es Salaam: Government Printer, United Republic of Tanzania

URT (2016a) *Draft Final Master Plan Report – Mwanza City*, Dar es Salaam: Ministry of Land, United Republic of Tanzania

URT (2016b) *Draft Mwanza Master Plan 2015–2035, Volume 2*, Dar es Salaam: Ministry of Land, United Republic of Tanzania

Watson, V. (2013) 'African Urban Fantasies: Dreams or Nightmares?', *Environment and Urbanization* 26.1: 215–231, doi:10.1177/0956247813513705

Yahya, R.A. (2014) *Final Report of the Urbanization and Planning of Villages and their Integration into the Urban Fabric*, Khartoum: Ministry of Physical Planning